

# TEXTILE BULLETIN

Vol. 56

July 1, 1939

No. 8<sup>9</sup>

*... it sticks to the roll  
as it drafts the yarn  
as it saves*



*The* **SONOCO**  
CORK COT

SONOCO MAKES  
EVERYTHING IN  
PAPER CARRIERS

—a constructed cork cot, made with SONOCO'S exclusive reinforcing agent—a seamless woven fabric inner-lining tube—heavily gummed so that it freezes to the roll—and stays.

And this same feature maintains the uniform density of the cork, which means true running, longer life, lower roll covering costs.



*Easiest Cot on the Market to Apply—*

**SONOCO PRODUCTS COMPANY**  
HARTSVILLE  
S. C.

**DEPENDABLE SOURCE OF SUPPLY**

# Lower the Cost of Lubricating Spinning Frames by using



The drip-less, waste-less lubricant that stays in roll-necks and off roll-covers. Reduces lubricant and application cost by outlasting oil many times over. *Also prevents soiled yarn!*

The fact that most mills use NON-FLUID OIL speaks for itself. *Write for free testing sample and instructive bulletin.*

**NEW YORK & NEW JERSEY LUBRICANT CO.**  
292 MADISON AVENUE  
NEW YORK

Works: NEWARK, N. J.

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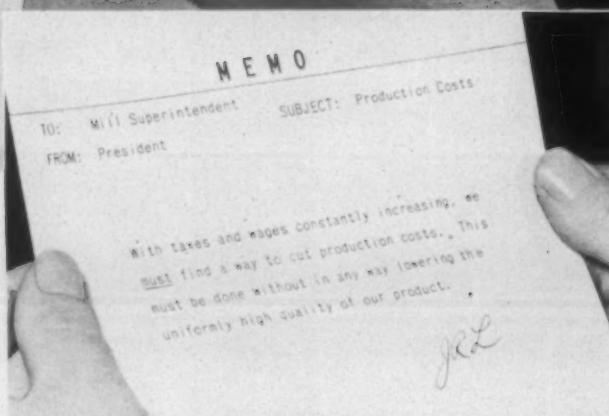


## "CHIEF'S ON THE WARPATH

about yarn quality and  
high production costs.



**"...HERE'S OUR CHANCE  
TO SELL HIM ON USING  
ARMSTRONG CORK COTS  
AND HELP CORRECT  
THIS CONDITION**



"ANY other time this memo would worry me. But right now it's mighty welcome. Here I've been wondering how I could talk him into making a change-over to cork cots—and I've got the answer. If it's better yarn quality and lower production costs he wants, I'll give them to him—with the help of cork."

More than 7,000,000 active spindles running on Armstrong's Seamless Cork Cots today are the best proof of the efficiency of cork as a roll covering. The high friction coefficient of cork means a stronger,

more uniform product. With cork you get fewer top roll laps, less end breakage, and you practically eliminate eyebrow trouble. Result—better running work.

And you save money on the cots themselves, too. Their first cost is no higher than other roll coverings, but your money-saving begins right away with the quicker, cheaper assembly. Then you find that the cork lasts longer—and the cots can be renewed three or four times. You simply rebuff them, and the total cost is only about half a cent a roll.

The net result is this—on the basis of roll covering costs alone, you save at least 50% by using cork.

Find out how *your* mill can improve yarn quality and cut production costs by a change-over to Armstrong's Seamless Cork Cots, the modern roll covering. Let an Armstrong representative show you actual production figures of mills spinning your range of numbers on cork. Or write to Armstrong Cork Co., Industrial Div., Textile Products Section, 921 Arch Street, Lancaster, Pa.



**ARMSTRONG'S Extra Cushion SEAMLESS CORK COTS**

CORK PRODUCTS SINCE 1860

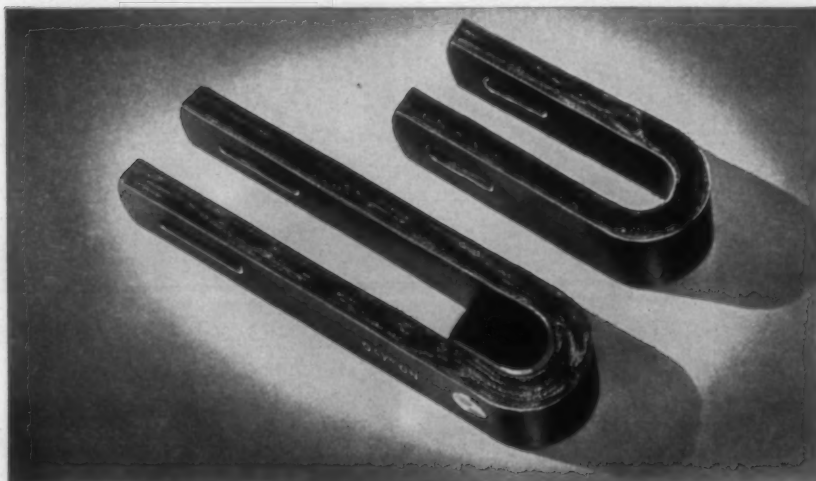
*For Greater  
Economy Choose*

## DAYTON Blue Label LOOM SUPPLIES

**Backed by 8 Years Experience, Development, Testing and Production—  
Proved by Installation after Installation**

**DAYTON BLUE LABEL LOOM SUPPLIES** are products of Dayton's famed laboratory controlled manufacturing methods. They represent the best that quality materials, skilled labor, modern equipment and trained technical experts have so far produced. They embody the results of over *eight years* experience in development, testing and production. Each product in the Dayton

line of Blue Label Loom supplies is designed and manufactured specifically for the job it is intended to do. And installation after installation has proved their greater economy. Write today for proof of their money-saving advantages or get complete details from your nearest distributor. The Dayton Rubber Mfg. Co., Dayton, Ohio and Charlotte, N. C.



**DAYTON LUG STRAPS** are specifically built with these essential qualities: 1. They have extra strength beyond every requirement. 2. They have sufficient cushion to assure protection to other parts such as cam rollers and picker sticks. 3. They have the desired resilience plus the ability to absorb shock with immediate

come-back. 4. They never require adjustment. 5. They have long, trouble-free life. Their low first cost assures you greater economy. Their freedom from adjustment and their constant power maintenance assures you increased production at lower cost. Dayton Loom Supplies are protected by U. S. Patents issued or pending.

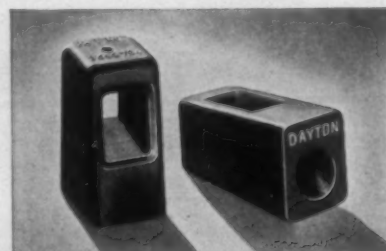
THE DAYTON RUBBER MFG. CO.  
Dayton, Ohio and Charlotte, N. C.

**DISTRIBUTED BY**

Greenville Belting Co., Greenville, S. C. • Greenville Textile Supply Co., Greenville, S. C. • Odell Mill Supply Co., Greensboro, N. C. • The Textile Mill Supply Co., Charlotte, N. C. • Industrial Supplies, Inc., LaGrange, Ga. • Young & Vann, Birmingham, Ala. • Textile Supply Co., Dallas, Texas • Providence Mill Supply Co., Providence, R. I. • F. L. Hervey Co., Fall River, Mass.



**REVERSIBLE DROP-BOX PICKERS** are made specifically for three purposes with the exclusive "Three-point Density" construction. *Point No. 1.*—Their composition is harder around the spindle rod. At this point a self-lubricating resinous bearing which will not become egg-shaped in service is used. *Point No. 2.*—A softer composition is used at the picker stick contact. *Point No. 3.*—Still another composition is used at shuttle contact to eliminate shuttle point loosening. So this "Three-point Density" construction accomplishes these three purposes: 1. Gives maximum cushion . . . positively will not wear the picker stick. 2. Gives proper cushion to shuttle point. 3. Gives perfect throw to shuttle throughout the life of the picker.



**DAYTON LOOM PICKERS**—Special fabrics bonded together with extra strong, resilient rubber gives Dayton Blue Label Pickers the proper cushion and approximately twice the strength of other pickers of this type. Easy to install—they fit the stick and yet have sufficient reserve stretch to accommodate large and off-size sticks. Molded under controlled heat and pressure, they keep their shape and stay "put" on the stick—assure maximum efficiency and reduce shuttle costs.

**Dayton**  
*Blue Label* LOOM SUPPLIES

MADE BY THE WORLD'S LARGEST



MANUFACTURER OF V-BELTS

# AHCOVEL-A

A BETTER SYNTHETIC SOFTENER OF THE SUBSTANTIVE TYPE



IT GIVES A **PLUS** VALUE TO  
SHIRTINGS AND DRESS GOODS

1. Provides velvety, soft finish on cotton, rayon, wool or silk.
2. Resistant to repeated washing and dry cleaning.
3. Non-greasy, odorless finish, which will not discolor with heat or age.
4. Easy to apply; economical to use.

★WRITE FOR DESCRIPTIVE CIRCULARS AND SAMPLES.

## ARNOLD-HOFFMAN & COMPANY, INC.

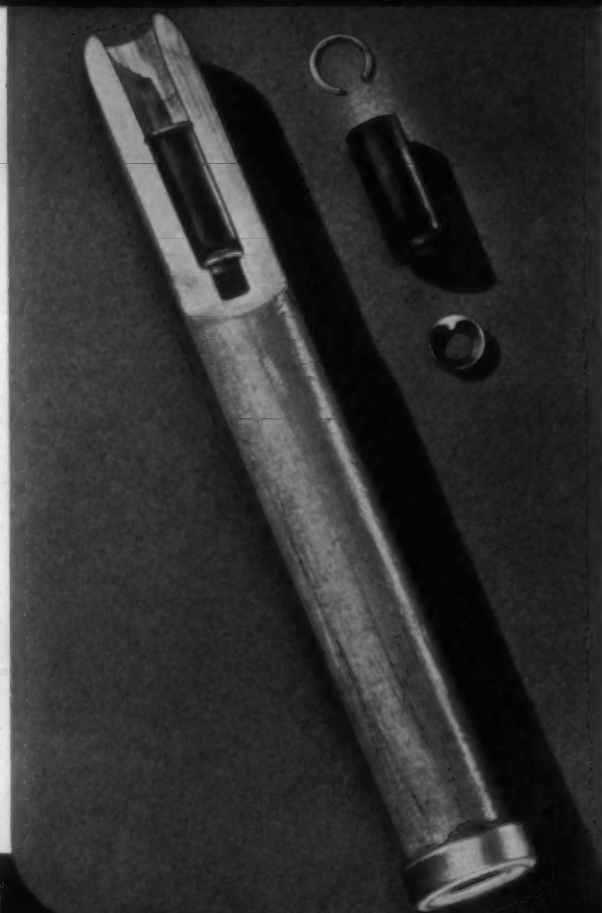
Established 1815    **PROVIDENCE, RHODE ISLAND**    Plant at Dighton, Mass.

NEW YORK • BOSTON • PHILADELPHIA • CHARLOTTE • COLUMBUS • GREENVILLE

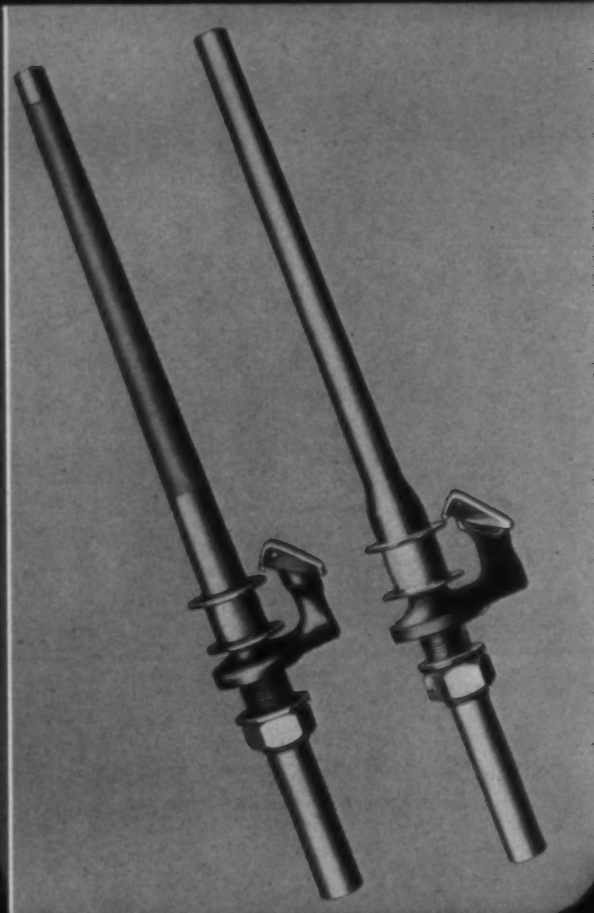


# FOR BETTER RESULTS in the SPINNING ROOM

Your Choice of Two Developments in Spindle and Bobbin  
Design to operate on the Modern Spinning Frame.



*the Cushioned Bearing*  
**FOR HARDWOOD WARP Bobbins**  
eliminates vibration — prevents wear at  
the upper spindle bearing — stops slipping.



*the Sleeve Spindle*  
**FOR CARRYING HARD FIBRE OR  
IMPREGNATED PAPER TUBES.**

WITH THE ADVENT of higher spindle speeds—longer traverses—larger rings and increased bobbin capacity came faults which seriously affected maintenance and production. To correct these faults we have designed the *Cushioned Bearing Bobbin* and *Sleeve Spindle* to carry large packages at high speeds efficiently. A **BULLETIN** with complete facts and details is now ready — write for your copy.

**SACO-LOWELL SHOPS 60 BATTERYMARCH STREET • BOSTON • MASS.**

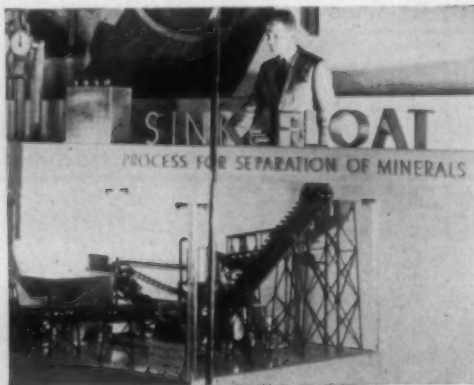
# HOW CHEMICAL RESEARCH CONTRIBUTES TO BETTER LIVING FOR AMERICA



Symbolic of the better things that have come from scientific research—a striking mural at du Pont's New York Exhibit—Chemistry's contribution to mankind.



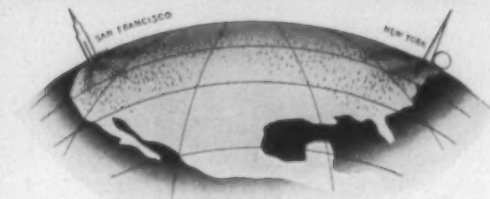
Millions will hear the story of the inner workings... will figuratively be taken into the laboratory and into the plant and will see step by step, how from such raw materials as coal, cotton, wood, vegetable oils, ores and salt, chemistry has produced a variety of products once unknown but now considered every day necessities.



It took 34 years of research by chemists and chemical engineers to perfect the "Sink and Float" process for gravity separation of coal and minerals by means of chemical "parting liquids." Still in its infancy, the development marks a long stride forward for the mining industry.



Improved products and new products—results of the close cooperation between du Pont research and industry—are on display and demonstrated at both Fairs.



The two great World's Fairs—San Francisco and New York—with their dramatic presentations of the accomplishments of American genius and enterprise are more than educational exhibits. They provide inspiration out of which will come many new things for the world of tomorrow. At each of these fairs, du Pont is showing how modern applied chemistry is daily bringing new comforts, new opportunities for gainful employment, better things for living—tangible evidence that everybody benefits with chemical progress.



The 107 ft. Chemical Tower at the entrance of the du Pont building, New York World's Fair, symbolizes modern applied chemistry and research.

## AN INVITATION

YOU are cordially invited to visit the du Pont Exhibits. In both you'll find much that is interesting and new. You will see and hear about products which will stimulate your imagination... and get ideas which you may be able to apply profitably in your own business.



E. I. DU PONT DE NEMOURS & COMPANY, INC.  
The R. & H. Chemicals Department, Wilmington, Del.  
District Sales Offices: BALTIMORE, BOSTON, CHARLOTTE, CLEVELAND,  
CHICAGO, KANSAS CITY, NEWARK, NEW YORK, PHILADELPHIA, PITTSBURGH

## A New Bobbin That Holds Fast and True

To Supplement the Patent Rubber Pad for Shuttle Springs—whose Reception by the Industry has been Sensational—we have a New Patent Bobbin with its Middle Ring so Changed that there is Great Increase in the Firmness with which it is Held by the Shuttle Spring

The Change in the Rings is Small—but Very Important  
It Increases the Improvement Brought about by the Rubber Pad for Shuttle Springs

### The Rubber Pad

Preserves the Life and Tension of the Spring so that the Point of the Bobbin Does Not Drop and Get Out-of-line in the Shuttle

### The Patent Rings on the New Bobbin

Increase the Gripping Power of the Spring and the Firmness with which it Holds the Bobbin

### Together They Give You

Reduced Shuttle Spring Breakage  
Less Wear on Notches in the Spring

A Smaller Cost for  
Shuttles and Shuttle Parts

Bobbins Held Pointing True  
Better Weaving-off of the Filling

Better Cloth  
And Less Seconds

### They Are Patented

And You Can Get the Rubber Pad for Shuttle Springs  
and the Modified Rings of the New Bobbin

Only in Draper Shuttles and Bobbins

**DRAPER CORPORATION**

Atlanta Georgia

Hopedale Massachusetts

Spartanburg S C



**VERSATILITY**  
**IN WETTING...DISPERSING...EMULSIFYING**  
**WITH DECERESOL OT**



*One of the bays in the Pure Research Division at the Stamford Research Laboratories of American Cyanamid Company, where experimental activity is constantly endeavoring to broaden the usefulness of chemicals.*

In addition to surpassing, in wetting, dispersing and emulsifying properties, all other products of this type heretofore developed, DECERESOL\* OT is one of the most versatile wetting agents available to the textile industry. Below are listed just a few of the applications where it is now being used with efficiency and economy.

Wetting out gray cotton piece goods prior to peroxide bleaching.

Wetting out gray cotton piece goods on a mangle, making same instantaneously and uniformly absorbent prior to gray sanforizing.

The preparation of raw stock cotton, yarn, and cotton

piece goods prior to dyeing with all types of colors.

An admixture to printing paste to give thorough penetration, greater color value, and increased fastness to soaping, especially on cotton piece goods printed direct from the bale.

The treatment of cotton piece goods and the addition to starch pastes on absorbent finishes.

In "brown souring" for obtaining better penetration of the acid and greater solubility of calcium and magnesium salts.

In the desizing bath with enzymes to insure penetration of the fabric.

\*Registered U. S. Patent Office

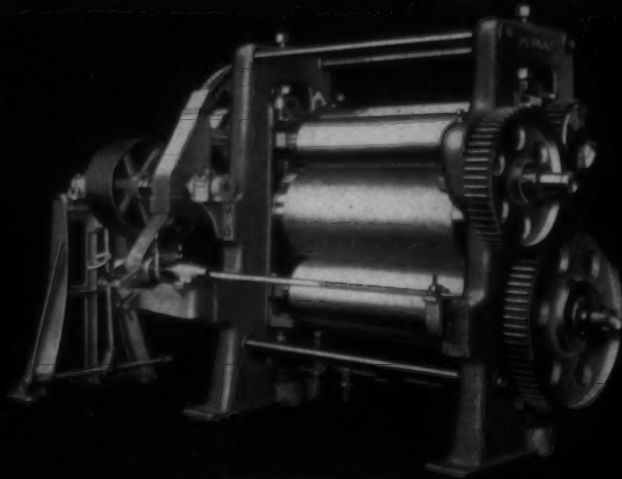
**AMERICAN CYANAMID & CHEMICAL CORPORATION**



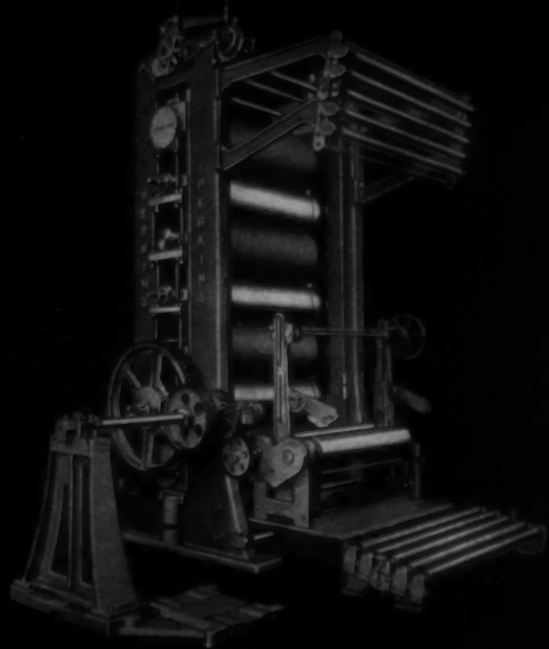
30 ROCKEFELLER PLAZA • NEW YORK, N. Y.

DISTRICT OFFICES: 89 Broad Street, Boston, Mass.; 600 S. Delaware Avenue, Philadelphia, Pa.; Russell & Bayard Streets, Baltimore, Md.; 822 W. Morehead Street, Charlotte, N. C.; 860 Leader Building, Cleveland, Ohio; 20 N. Wacker Drive, Chicago, Ill.; 2006 Race Street, Kalamazoo, Mich.

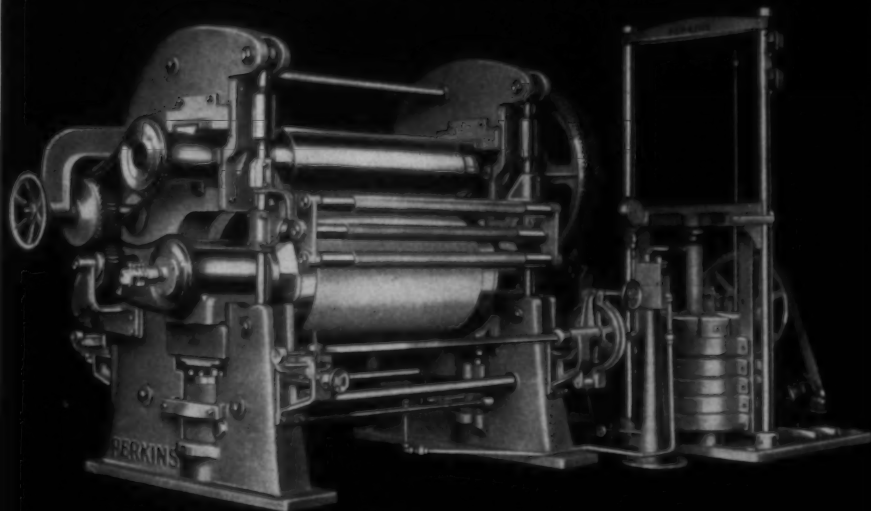
# PERKINS CALENDERS



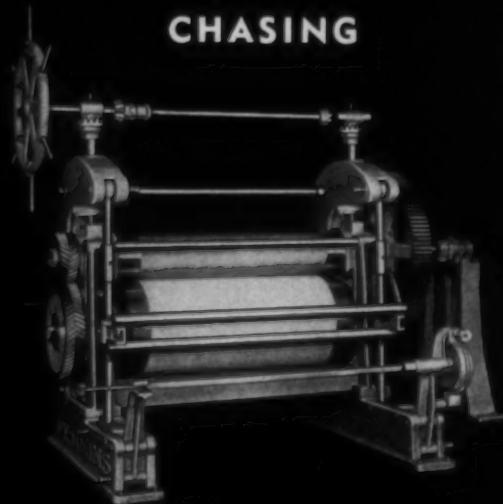
FRICTION



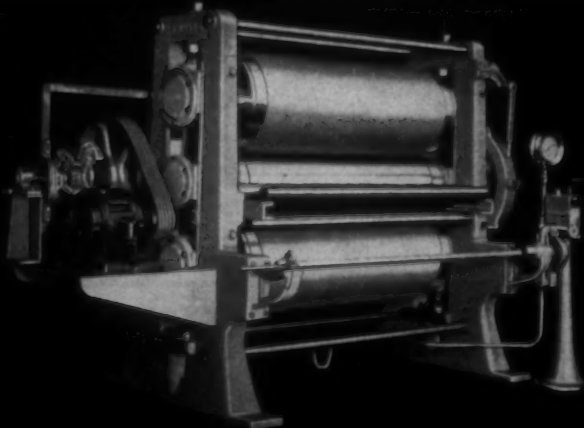
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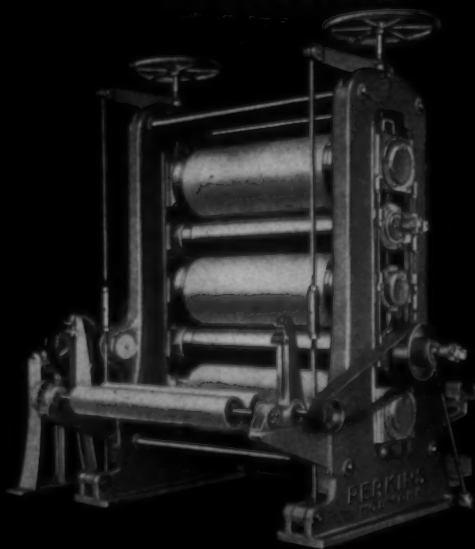
SCHREINER



EMBOSSING



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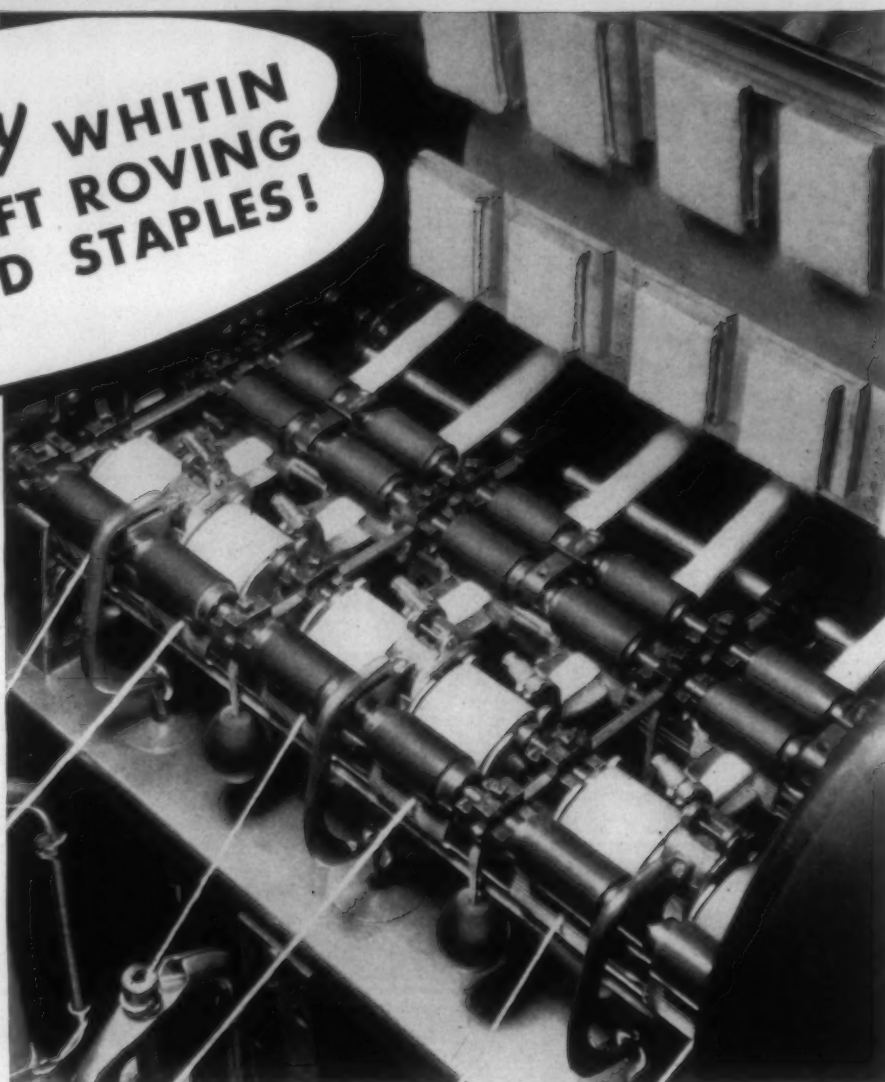


ROLLING

**B. F. PERKINS & SON, Inc.**  
HOLYOKE • MASS.

**SPECIFY WHITIN  
SUPER-DRAFT ROVING  
FOR MIXED STAPLES!**

APPROXIMATELY THREE  
QUARTERS OF A MILLION  
SPINNING SPINDLES  
OPERATING ON ROVING  
MADE ON THIS SYSTEM.



**W**HITIN Super-Draft is not only the BEST System for cotton drafting. It is the ONLY single process system on which MIXED FIBERS of different lengths — cotton, wool, worsted noil, flax and staple rayon — can be run successfully on cotton machinery.

Whitin Super-Draft has enabled many cotton mills to reduce their costs, and to enter new fields hitherto restricted to worsted mills.

**WHITIN MACHINE WORKS**

WHITINSVILLE, MASSACHUSETTS, U. S. A.

CHARLOTTE, N. C.

ATLANTA, GA.



# WORLD'S LARGEST SWIM SUIT MANUFACTURER SAYS...



# TEXACO IS TOPS!



Above: ADMINISTRATION BUILDING of Jantzen Knitting Mills, Portland, Oregon.



Above: JANTZEN SPINNING MILL where Texaco Lubricants are in use 100%.



Above: SPINNING FRAMES in Jantzen Knitting Mills. They are Texaco lubricated.



HARRY HOYLE, Jantzen Spinning Department Superintendent, at his desk. Mr. Hoyle is a graduate of Halifax Technical College, Halifax, England.

THE JANTZEN KNITTING MILLS, Portland, Oregon, showplace textile mill of the Pacific Northwest, is constantly faced with the necessity of producing yarns that are absolutely free from oil stains. Superintendent Hoyle reports that Texaco Lubricants keep swim suit yarns clean, save h.p. by reducing friction. Cap spindles running 7,000 r.p.m. 24 hours a day stay cool.

His report reads—"We have not found Texaco's equal, let alone anything better," and "we feel that we have the right products in the right place."

Trained lubrication engineers will be glad to assist you in uncovering the savings possible with Texaco Textile Mill Lubricants. To get this engineering service and for prompt delivery, phone the nearest of our 2229 warehouses or write:

The Texas Company, 135 East 42nd Street, New York City, N. Y.

# TEXACO



## TEXTILE MILL LUBRICANTS



L. J. RUSHWORTH  
Retiring President  
Southern Textile Association

## Address of President Rushworth at S.T.A. Meeting\*

THIS, the Thirty-First Annual Meeting of our Association, brings to a close a year of varied and interesting events.

One of the most pleasant is this gathering, at which we renew old friendships, and I hope make new.

Let me express to you my deep appreciation of the kindness by which I am permitted to address you, who, in this Southland have, by your efforts, made our organization outstanding in the textile industry, and have given me, "not a native son," the honor and privilege of serving as your president.

I would not have had the courage to accept this leadership, had I not been aware of the splendid support I would receive, which, however, has passed my expectations.

The time has come for me to render an account of my stewardship. The progress and success our association has enjoyed this year is due in great measure to our chairman and board of governors, assisted and advised at all times by our capable and esteemed executive secretary, Marshall Dilling.

Our corresponding secretary, B. Ellis Royal, has rendered outstanding service by attending divisional meetings and having comprehensive reports prepared of the discussions on questions pertaining to our industry. He has been popular in his contacts with members and visitors.

We have had during the past year eight each, fall and spring meetings, with an average attendance of 180, making a total of approximately 2880 members and visitors in attendance at these meetings.

Our divisional chairmen and officers have been alert, as is shown by this attendance and the lively interest in the forums.

Our association was well represented at the Textile

Exposition in Greenville, S. C. on Southern Textile Day, by its officers and membership.

During the past year, we have experienced events of national and international importance, which have directly and indirectly affected our industry. We have had, not only the routine problems—unsettled economic conditions, pending legislation of vital importance, contemplated adjustments or revisions of laws already in effect—but we have also lived in the shadow of such another conflagration as we experienced two decades ago. None of these things have had a very stabilizing influence on industry.

It is not my intention to dwell on these conditions in detail. I shall endeavor, rather, to draw your attention to two factors which have always been closely allied and are of enduring significance in our industry—*freedom and machinery*.

I wish to give you a quotation from an editorial by one of our leading columnists, Dorothy Thompson:

"The world tomorrow will be a continuation of the world today, and in many of its aspects, perfectly horrible.

"But the world the day after tomorrow will have learned a great and costly lesson.

"It will have learned that the first business of men on earth is not the creation of the greatest or most populous cities, or the longest bridges, or the most monumental public works, or the most powerful armies and navies, but the creation of human beings better than any previous type.

"The new human beings will be systematically trained for personal courage, generosity, enthusiastic faith in life, social sensibility and co-operativeness, and the greatest possible development of their own physical, mental and spiritual resources, not however for the pursuit of their own interests, but as members of the community.

"There will be a much more widespread realization that the possession of five senses, of a brain, and of mar-

\*Presented at Annual Convention of the Southern Textile Association at Myrtle Beach, S. C., June 16-17.



velously articulated limbs, is the most enormous and most sacred gift."

These words might have been written 740 years ago. In 1199, when chaotic conditions prevailed, business men found it necessary to make an effort to remedy these, and also to secure a voice in government. The formation of the Merchants Guild was the result.

These guilds are the origin of all business corporations and associations. From this source developed guilds of a wide variety, some of which have been of great benefit to humanity, others of doubtful value. If you will look carefully into the reason for the Birth Certificate of Democracy, you will find these guilds and the barons united to bring about a document that was fair and just to all men—the *Magna Charta*.

That time-worn document of the day before yesterday is now in this country. Today is the world tomorrow of the *Magna Charta* days. Let me call your attention to a few of the articles from this charta which are of particular significance today, as our problems are, in a great degree, similar to theirs:

"Article No. 3. No aids or subsidies allowed to be levied upon the subjects unless in a few special cases, without the consent of the Great Council.

"Article No. 6. One weight and one measure shall be used throughout the kingdom.

"Article No. 7. All the men shall pass from, and return to the realm, at their pleasure, except in time of war.

"Article No. 8. All cities and boroughs shall preserve their ancient liberties.

"Article No. 12. No peasant (freeman) shall by a fine be deprived of his instruments of husbandry."

This was the beginning of the Age of Freedom. This first act of freedom influenced our own Thomas Jefferson, who, believing "All men are born free and equal", was greatly responsible for the Constitution. By the creation of our United States, the world reached one of the turning points of history, although at the time it seems not to have entered the thoughts of a single European statesman.

Most startling was the discovery that England herself had not been ruined by her great defeat.

*The came the age of machinery.* By a change unparalleled in history to that time, England laid aside her older agricultural character to develop industrial forces which made her the workshop of the world.

How mightily this industrial revolution was to effect English politics and society of that period, and leave its influence on every nation of the world through future generations, is the reason I outline some of the following facts known to you in our industry.

In the early days of the reign of George the Third, James Brindley was cutting through England with canals, providing needed means of transportation.

James Watt was silently perfecting the invention of the steam engine.

John Hargrave, a Blackburn weaver, in 1767 invented the Spinning Jenny, thereby spurring the wits of a barber's assistant, Richard Arkwright, to greater improvements in 1769 when he developed a machine for spinning by rolls revolving at different rates of speed.

Following close behind him, Edmund Cartwright, in 1785, with the power loom, revolutionized the textile industry.

Matthew Arnold said:

"Faith in machinery is our besetting danger. Often in machinery, most disproportioned to the end which this machinery is to be employed, if it is to do any good at all, it is to serve, but always in machinery as if it had a value in and for itself.

"What is freedom but machinery? What is population but machinery?"

*Corporations have enabled man to achieve industrial wonders.*

H. L. Winslow says, "There is hardly an invention, discovery, or any industrial advance that has not been brought to fruition by such corporations.

"They have given us our banks, our railroads, our factories, our colleges and universities. They have made the impossible possible. They have tunneled through the mightiest natural barriers and have sent the Iron Horse snorting through the mountain's bowels. They have entered the blighting, trackless deserts of the West, and by irrigation turned them into fruitful groves.

"They have been the mightiest democrats the world has yet produced. They have brought within the reach of all, comforts and delicacies that at one time graced only the homes of the rich."

How could corporations have achieved such wonders without freedom, machinery, and men like you?

You would not be in your present position without good, sound, systematic training. Your co-workers are entitled to the fruit of your experience. The man who is employed for wage is a man of business as much as his employer.

Thomas Carlyle said:

"All work is sacred, were it but hard labor. In it is something of divineness."

We are learning a great and costly lesson. Let us prepare ourselves for the day after tomorrow. You are not lacking in personal courage if you have been able to keep your feet on the ground through this present era of conflict and change. You will at all times stress one of the most important functions of management—*safety*: *Physical safety* and the elimination of occupation hazards, *personal safety* and the elimination of "Ism" hazards, *plant and management safety* and elimination of modern hazards, *mental safety*.

Our industry is referred to as being "indisposed". It would be better if we were more conscious of the fact that it is "indispensable".

Raiment is a small factor. From swaddling clothes to winding sheet, we are dependent on our industry, more than all others combined, for our daily existence.

*Community safety and the elimination of selfish hazards*—You will give yourself, your knowledge, training and experience to those placed in your charge. You will not lose your faith in right, nor be discouraged by what at the time may seem to be an insurmountable difficulty. You will show by your interest an understanding of the problems of your workers. However, you have your limitations, but always let them feel they can come to the management for sympathy and understanding. When the mental, spiritual and physical are involved beyond your ability to help, refer them to their community physicians, their minister and doctor.

(Continued on Page 56)



# Fundamentals of The New Textile Technology\*

By E. R. Schwarz\*\*

IN the ultimate analysis, the old adage that a chain is no stronger than its weakest link, is no truer than that a fabric is no better than the fibers it contains. Truer still is it that no *fiber* is better than its weakest link—for all textile fibers are made up of long *chains* of molecules and the constitution and arrangement of these chains makes for the fundamental differences between fibers and hence between one textile and another.



No textile manufacturer would dispute the claim that the kind and arrangement of fibers in a yarn makes the yarn. Worsted yarn is different from cotton yarn and cotton yarn is different from rayon yarn. There is no room for argument, since whole industries have grown up around these differences, and just as surely, with the advent of continuous filament and cut staple synthetic fibers, a new industry will be born. It will have one great advantage over the cotton industry, the woolen industry, the worsted industry, even the silk industry in that it is coming in an age of technological development. Imperfect as our knowledge now is of the ultimate constitution of the rayon filament, it is better than our knowledge of the constitution of any of the natural fibers.

And here is a paradox, for the more we learn about *synthetics* the more we learn of value about the *natural* raw materials of the textile industry, and conversely, the more we learn about the basic properties of the *natural* fibers, the more of importance we discover in regard to the fundamentals of *synthetic* fiber structure and production. It is an old saying that you cannot learn to ride a bicycle by correspondence. You must get on and ride. Now that man is making fibers he begins to appreciate more intensively what a remarkable piece of work nature

has been engineering through the medium of the sheep, the silk worm and the cotton plant over these thousands of years. It is a tribute to modern science and to that particular branch of it known as textile technology that in the field of synthetic filaments we have progressed in a few years further along the path to our goal than nature has in as many centuries. Perhaps it is in no small measure due to the fact that the natural raw materials of the textile industry were not originally intended to be such. It would take a powerful imagination indeed to conceive of a sheep as being brought into the world by a beneficent Creator for the sole purpose of providing mankind with a fleece which he could scour, card, gill, comb, draw, spin and weave into fabric. It would take more credence than I can summon to suppose that the first cotton plant, developing its bolls of fiber, was allowed to poke its first shoots through the earth simply to provide me with a cotton sheet. The *Bombyx Mori*, fluttering through its brief span of life to mate, lay its eggs, and thus start the cycle ranging through silkworm, chrysalis, reel, throwster, and weaver to the silks and satins which have adorned man for centuries had no conception what its purpose in life was to supply me with a silk handkerchief.

But the scientist with his varied equipment for the production of rayon has concentrated throughout the duration of his labor on the ultimate production of a fabric. His specifications are laid out for him in advance. He works to a definite goal. He is quite unlike the silkworm who extrudes its filament to form a cocoon without a



thought of the use to which it will be put by you and me. But in all this we must not forget that these natural fibers have been the outstanding fibers for textile use for untold generations, and that they must have possessed something which would allow them to endure so long. The very ingenuity of their architecture; the method by which their atoms of carbon, oxygen, hydrogen or nitrogen have been combined into so complicated a structure, has made cer-

\*Paper presented at Annual Meeting of Southern Textile Association, Myrtle Beach, S. C., June 16, 1939.

\*\*Professor of Textile Technology, Massachusetts Institute of Technology.

tain that we have not begun to scratch the surface of their actual being even with such powerful tools as the X-ray, the ultraviolet light, the microscope, the microtome, and the testing machine.

### Synthetics Not Like Natural Fibers

And so we are a long way from having a synthetic wool, or a synthetic cotton. Only a short time ago I could have included silk—but the chemists and the physicists are catching up with nature. Nylon comes much nearer being silk than any synthetic so far produced approaches wool or cotton. Yet it is not silk. Its properties are not the same—its uses will depend more upon its own merit than upon its nearness of approach to silk. Its greatest advantage is in the control which can be exercised by its creators at every step of its manufacture. And this introduces what I believe to be one of the most vital but one of the most vexing problems with which the manufacturer or the textile technologist has to deal; the problem of variation. So long as he contends with products of nature he must also contend with all the vagaries of nature from weather to the boll-weevil. The latter we have done something about, but the former we can only join Mark Twain in talking about. The metabolism of the sheep or the worm is beyond our immediate control. The test tube and the spinneret, while the chemist frequently finds them *diabolic*, are still definitely not *metabolic*. While the processes of the production of synthetic textiles may be devilishly perverse, the technologist at the same time may be devilishly clever.

But to return to a theme on variation. Science has fortunately provided us with a branch called mathematics. The mathematician has in turn learned a lot about what he calls the laws of chance. He has studied probability and the theories of sampling and has in so doing provided the technician with a means of distinguishing between significance and insignificance; between the related and the nonrelated; between reality and mirage. It is not enough to measure the strength of two yarns by performing a series of tensile tests on each and computing the average strengths. It is not enough to note that one average differs in magnitude from another. We must know whether the difference could have happened simply because of the inherent variability of the yarns and of the fibers of which they are composed or whether it shows that the yarns are really different in strength. It appalls me to think of the amount of data conscientiously obtained which has been the basis for changes of first magnitude in expense and difficulty in the manufacturer's plant and which has never been investigated to see whether the changes made were justified in the slightest degree. It further appalls me to realize how often tests have been performed in all good faith and have failed utterly to measure the property which was under investigation.

### Tests Not Really Accurate

Perhaps the saddest instance of failure to measure the desired property is to be found in the determination of the tensile strength (so-called) of textile materials. In the case of fabrics, tensile strength has been measured according to various methods for a number of years and is far too often taken as uniquely indicative of the quality of the material. Neglecting for the moment any consid-

eration of the method of test, the sampling procedure has been uniformly poor. While it has been recognized that test specimens must be so taken as not to include the same set of yarns in the direction of test, and so as to be at least a reasonable distance from the selvage edge of the goods, the specifications continue to require a minimum of five tests in each direction, without regard to the variability of the fabric. It is human nature where a minimum number and a convenient number such as this mentioned to use it blindly and without regard of consequence. The number of tests to be made depends rather upon how variable the material is and what degree of precision is necessary. The degree of precision required for one instance may be wholly different from that required in another and it is therefore impossible to set up any optimum number of samples as being the proper number to take in any general case. The degree of precision is conditioned frequently by the difference found between the average strength of the fabric under test and an established standard, or between two fabrics with or without different treatments or otherwise involved. How many samples to test should be determined in each instance independently.

There is no mystic quality to the numbers 5 or 10—save that in the former case the average is easily found by multiplying the sum of the values found by 2 and shifting the decimal point; while in the latter instance the average is found by simply shifting the point. That the resulting information may be meaningless or even misleading seems to worry nobody. In turn the precision which can legitimately be demanded is contingent upon the testing machine as well as upon the specimen tested and upon such other factors liable to cause variation as atmospheric condition, previous history of the material or preparation of the test specimen.

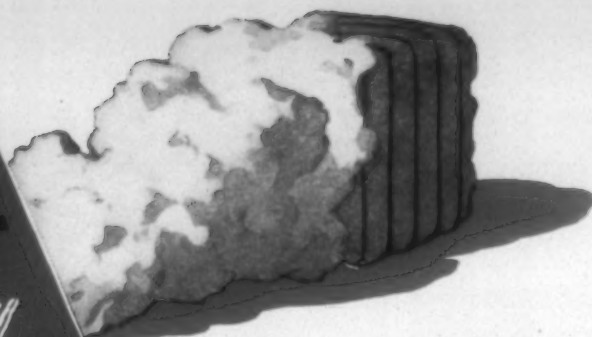
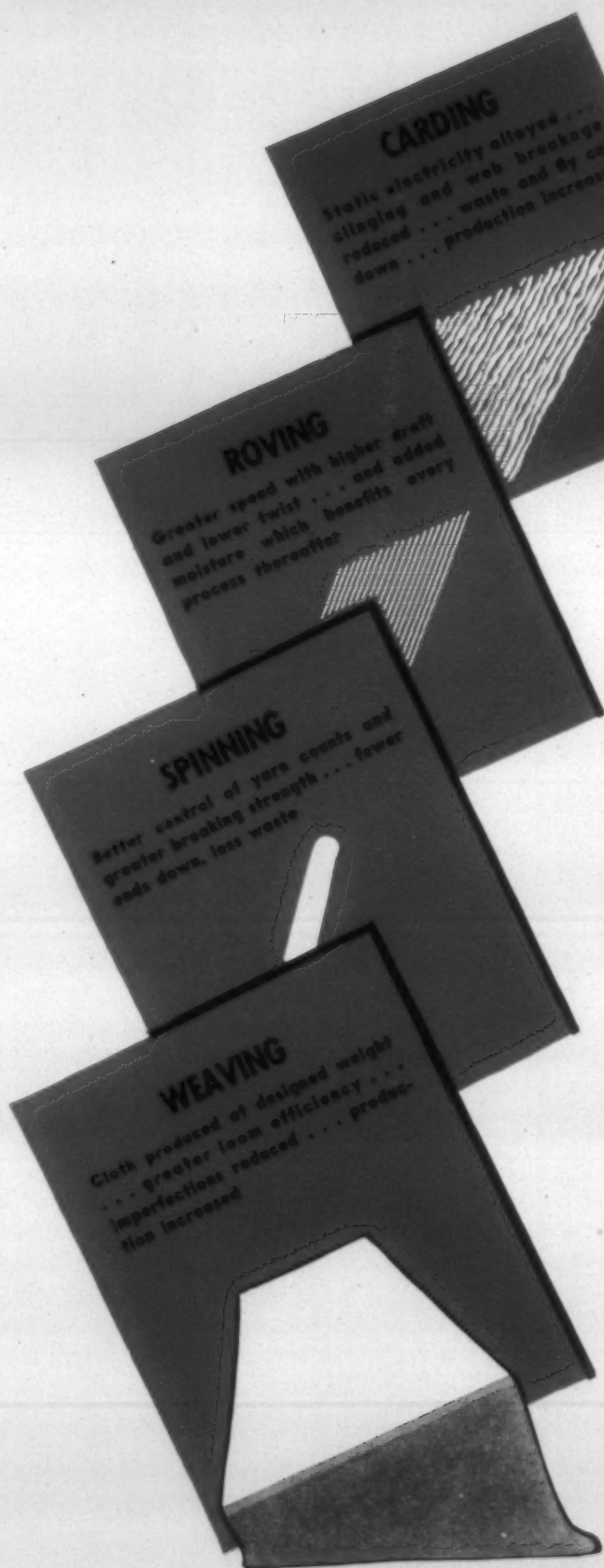
### Technologist Must Think

Let me say here only that no testing machine, and that no manual or handbook will think for the technologist nor will they absolve him from the necessity to exercise his brain. The machine will make possible results which would otherwise be too hard to obtain in a reasonable time or with reasonable control and will exert for the operator forces far beyond those available to his unaided muscle and will do so repeatedly and rapidly, without fatigue. The manual or handbook will relieve the technologist of carrying in his head continuously a mass of detailed information, the presence of which quite conceivably frequently can so clutter up his mental processes as to prevent clear thinking.

The testing machine is a convenience, and so is the reference book. The determination of correct procedure, the determination of the proper way to work up the data, and then the proper interpretation of the data are matters of individual judgment and are not matters of convenience but necessity. For example, I have just referred to the stipulation (see your reference book) that the tensile test specimens must be so taken that no two include the same set of yarns in the direction of test. Why is this desirable? Simply to try to make certain that a representative strength is measured for the fabric and that the same yarns are not simply tested over and over again. Is this

(Continued on Page 55)





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# Call Cotton and Market Manipulating

**Copied from Part No. 2 of "Hearings before the Committee on Agriculture and Forestry, United States Senate, Seventy-Fourth Congress, Second Session pursuant to S. Res. Nos. 103, 125, 172, and 182, April 1 to 30, 1936."**

*Attorney:* When you sell cotton to a mill on call, based on some particular month, your position is long in that month on the futures side and short on spots, is it not?

*Broker:* It is complicated. Let us put it right down to concrete facts so we will know that we are not talking at cross purposes.

*Attorney:* All right. You represent Doe & Co., and you sell to Mill A 100 bales Middling seven-eighths, 80 points on December. Now, your position, then, is short 100 bales cotton and long 100 December?

*Broker:* Not necessarily. I might not have any position at all except the contract to deliver the mill 100 bales Middling seven-eighths at 80 on December. I might not own the cotton.

*Attorney:* I see.

*Broker:* I have not the cotton.

*Attorney:* Are you not short 100 bales on the contract, Mr. Broker? You have to deliver it?

*Broker:* Yes; I have the contract with the mill.

*Attorney:* I did not say your position was in the market, but I said you have a position.

*Broker:* Yes; I have the contract with the mill.

*Attorney:* I did not say your position was in the market, but I said you have a position.

*Broker:* I did not understand it.

*Attorney:* You are short 100 bales of cotton?

*Broker:* I owe the mill 100 bales of cotton.

*Attorney:* Which you have not got?

*Broker:* Which I have not bought at the present time.

*Attorney:* Yes; you are short 100 bales of cotton spots?

*Broker:* Yes.

*Attorney:* On the other side you have a balanced position; you are long 100 December?

*Broker:* Now, has the mill fixed the price?

*Attorney:* No fixation yet.

*Broker:* Then I just have a contract to deliver the cotton. I have no market position whatsoever.

*Attorney:* You mean you are not long 100 December by reason of that call sale?

*Broker:* No, sir; not unless the mill has fixed the price.

*Attorney:* Then you mean you are perfectly open on that 100 bales of cotton?

*Broker:* Until the mill fixes a price. You and I are talking at cross purposes. You say I have made a contract to deliver a mill 100 bales based on December?

*Attorney:* That is right.

*Broker:* And the mill has not fixed the price, and I have not bought the cotton?

*Attorney:* Yes.

*Broker:* Therefore I have no position, in the first place, in the futures market whatever.

*Attorney:* I did not say in the market, but you have a position, nevertheless. Now, you buy the cotton—

*Broker:* If you bring the market in, you automatically tie it up with the future market.

*Attorney:* I say, your position, based on December, is a long position. If the market goes up, you get more for your cotton, don't you, and if the market goes down you get less for it, don't you?

*Broker:* I have no market position as yet, Mr. Attorney.

*Attorney:* Let us see. If the market advances after you have made that contract with the mill, don't you get more for the cotton from the mill?

*Broker:* It depends on when the mill fixed the price.

*Attorney:* I don't want to be quibbling.

*Broker:* I am not quibbling.

*Attorney:* But if the market goes up from the time the mill purchases and it later on fixes the price at a higher level, you get more for your cotton, don't you?

*Broker:* Yes.

*Attorney:* If it goes down, you get less?

*Broker:* Yes.

*Attorney:* Therefore, you do have a market position, do you not?

*Broker:* No; not in the way I understand market position.

*Attorney:* Let us put it this way, then: You have sold that cotton on call?

(Continued on Page 64)

# WHY THESE FOSTER WOUND PACKAGES PROMOTE **UNIFORM DYEING**



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Write for Bulletin A-91.

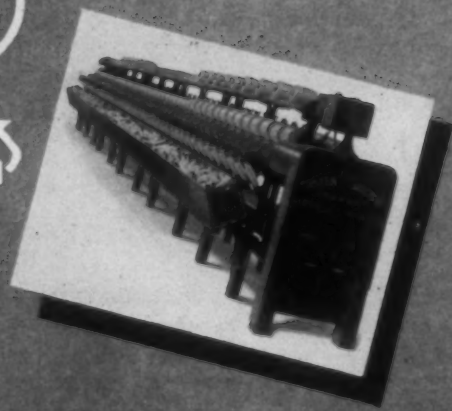
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# THE SMALL THINGS THAT COUNT\*

By H. H. Willis

Dean Clemson Textile School

Members of the Southern Textile Association and Visitors:

**W**HEN your secretary called me and asked me to make a talk on this occasion, I accepted with some reluctance because I knew that I would be talking to a number of old-timers in this organization for whom I had worked during my early days in the textile industry. I do not feel that I have much new information to offer to men of your experience; however, I do think it is worthwhile for us to stop and consider together a few of the *small things that count*—the little things that create the intangible but invaluable assets of good will between employer and employee.

What I have to say to you is out of my own experience and observation. In my talk I shall use various cases as illustrations. Some of these cases are taken from my experience in the industry and on the South Carolina State Board during the life of the NRA. I hope you will not take these case illustrations as criticism because they are not meant in that way. They are offered in the hope that they may be of some help to you in solving some of your many problems.

One of the little things that counts is tact in suggesting changes. I remember an incident in my early days when I was making spinning bands in the mill. The mill had changed overseers and this new overseer asked me if I would "mind" handling the spinning bands in a certain way. We had been accustomed to throwing the bands on the rack and of course with the extra twist they kinked and tangled considerably. The new overseer showed me how to handle the bands to prevent tangling. The manner in which he made this suggestion and showed me how and why has stayed with me because of the courtesy he had shown in asking a mere band boy if he would "mind" doing something in a certain way. Needless to say, I did my best to do it his way.

A tactful request which explains why usually receives a more willing response than an unexplained order.

Recently some of our students were making paths across the new grass around the textile building. I mentioned that I would have to speak to them about it. My eleven-year-old son said, "Daddy, what are you going to say? Are you going to tell them that they must not go across? If you do, they won't quit. Every time our teacher tells us we must not do something, we do it or bust." I took his suggestion, and appealed to the stu-

dents' pride in the appearance of the new building. That method worked. So you see that the youngsters can sometimes offer a suggestion as to the tactful way of handling a situation.

## Patience In Explaining Situations

Another little thing that counts is patience in explaining situations. Recently a student came into my office very much provoked at being asked to conform to a certain college rule. He was ready to quit school rather than conform to a rule which seemed to him unfair and unnecessary. When the ruling was explained to him in its relation to 2,100 students, he saw the justice of it, even though it seemed to work a hardship in his particular case. Of course talking it over and explaining took time but it was worth it in that he left in a good frame of mind—no longer sore and resentful against authority. Taking the patience to explain will work in the mill as well. I recall a case which came up during my work on the NRA Board. A committee registered a number of complaints on discrimination and overload. In talking with them, we discovered that the mill superintendent had given the committee the impression that he had neither time nor patience to discuss these complaints. The Board suggested to this superintendent that he take time to acquaint the committee with the financial condition of the plant. He did so and about two weeks later the committee advised the Board that they were willing to drop all complaints on discrimination and overload in view of the financial straits of the mill.

## Dealing With Grievances

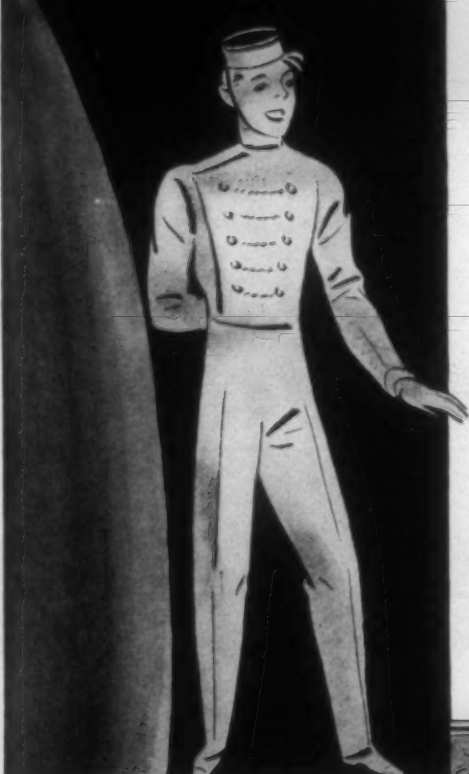
Yet another thing that counts is fairness and promptness in dealing with grievances. Possibly nothing breeds more resentment than the feeling of having been unfairly treated. In one of the cases brought before the NRA Board, the superintendent stated to the Board that he knew that there were two or three jobs in the plant which should be adjusted but since he believed that any changes would probably bring up many more complaints he had decided to let the whole matter rest and wait for the recommendation of the Board. In my opinion, he made a mistake. In failing voluntarily to handle the cases which he knew deserved adjustment, he lost a chance to show his workers that he was interested in their problems and was trying to be fair and just.

A grievance is a smoldering fire which at any moment may burst into flames. Strikes are built on a foundation

\*Address delivered at meeting of Southern Textile Association, Myrtle Beach, S. C., June 16th.

(Continued on Page 56)





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# "King Cotton" In The Dog House\*

By Dameron H. Williams

**W**HEN we went to school we learned in our study of Latin the amazing fact that all Gaul was divided into three parts. Just why the division came about I don't know but possibly there was a time in that country when the executive, legislative and judicial departments got into such an argument, one with another, that each finally took a third.

This purely informal talk I'm going to make is divided into two parts. I suppose the connection with Gaul comes about by reason of the amount of gall I possess in attempting to make a speech anyhow.

I want to discuss with you, briefly, two matters of interest to all of us. The first division has to do with raw cotton, its handling, grading and general characteristics. Secondly, we are all interested in the cotton situation, the carryover now in the government loan, proposed remedies, prospects for the future and many things happening to us who literally live in the cotton business.

You gentlemen are interested in the converting of raw cotton into yarn, cloth and finished products in your manufacturing plants. We, as cotton merchants, are in-

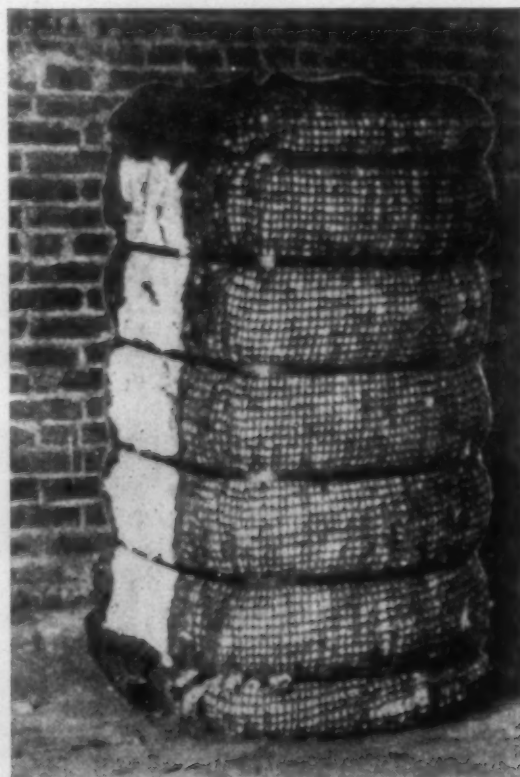
terested in the buying, handling and selling of raw cotton to you. Both of us are intensely interested in the proper classification of cotton, that is, its grading, stapling and preparation for your use. If we as buyers can reduce the hazards of our business by proper classification we can operate with greater efficiency. On your part, it is most obvious that the character of the cotton you spin greatly affects the quality of the finished product.

The classification of cotton is a most inexact science as

we all are aware. And right here I want to disclaim all intent set myself up as an "Expert." I have always heard that an "Expert" was a man from out of town and next time you go to hear some imported speaker give a lecture on the Life and Habits of the Albino Rat, or some similar subject, please keep in mind the definition I have just given you. As soon as you have had time to digest what the speaker said you realize he was just another guy making a talk and not an "Expert." I feel very sure you will reach such a conclusion after I have finished.

## Four Characteristics of Cotton

In the classification of raw cotton we have to consider four characteristics—its grade, that is, the amount of leaf



in the bale together with its color and other similar considerations. Next we have to approximate its staple, that is, the length of the fiber. Then comes "preparation," that is, the relative smoothness of the bale, and, finally, that "Will o' the Wisp" we choose to call Character. When you start cotton going through your mill you are either knowingly or unknowingly giving consideration to all these things.

Through very intelligent work on the part of the Department of Agriculture and by co-operation of all inter-

(Continued on Page 50)

\*Paper presented at Annual Convention of Southern Textile Association, Myrtle Beach, S. C., June 16-17.

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# S. C. Carders and Spinners

## Discuss Mill Problems

**T**HE Carders and Spinners' Section of the South Carolina Division of the Southern Textile Association held its regular spring meeting at the Franklin Hotel, Spartanburg, S. C., on Saturday, May 13th, beginning at 10 o'clock in the morning. There were approximately 275 mill men present, with Joe Lyons, Jr., of Orr Cotton Mills, Anderson, S. C., general chairman of the Division, presiding.

*The first part of the discussion, which was concerned with addresses by Mell Glenn and Brice Waters, and the discussion on carding questions, was published in the June 15th issue. The second part of the discussion, on spinning, continues here, with Henry Wood, Superintendent and Manager of the Oconee Mills, Inc., Westminster, S. C., leading:*

### DISCUSSION ON SPINNING

*T. Henry Wood, Oconee Mills, Inc., Westminster: I am sorry I have not had time to make any preparation. I shall just read the questions and let you discuss them. The first one is: "Have you found it necessary to make lighter filling numbers in recent years? If so, do you use the same cotton? What twist multiple are you using on filling?"*

*That would probably apply most to a print-cloth mill. I notice Mr. Splawn over here, who has had quite a bit of experience on print-cloth numbers. I do not know whether he is on them now or not. What do you have to say about that?*

*W. W. Splawn, Overseer Spinning, Kendall Mills, Pelzer: About 3.63 is the twist multiple.*

*Mr. Wood: Has it been your experience in recent years that you have had to run your filling numbers lighter? How about it, Mr. Lockman?*

*John S. Lockman, Overseer Spinning, Monarch Mills, Lockhart Plant, Lockhart: I am running practically the same numbers I have been running for several years. We have always made our numbers a little bit lighter than most mills that I have visited and heard from.*

*I wish people would quit talking about twist multiple and say what draft they are running and what gear, and then you would know what the twist multiple is.*

*Mr. Wood: There is a lot of truth in that.*

*Mr. Lockman: These technical terms sometimes do not mean much, though sometimes they mean a whole lot. I am making anywhere from 41½s to 46s filling, making different weaves of goods. We run anywhere from 41½s to 42s on what we call 4.75 goods and run anywhere from 43s to 46s on 6.70 goods.*

*Mr. Wood: In other words, it is just determined by*

*the weight of your cloth.*

*Mr. Lockman: And then that depends a great deal on what they put in, in the size. If they put in a lot of heavy stuff down there we have to think of that.*

*Mr. Wood: Has it been your experience that in the last few years you have been running a better staple?*

*Mr. Lockman: Since we put in long draft we have increased the length of the staple.*

*Mr. Wood: How about you, Mr. Hammond?*

*W. E. Hammond, Supt., Balfour Mills, Balfour: We have not found any difference in our numbers in recent years. We make 30s and 40s. I think this variation might come about when the slasher man decided to size his yarn a little heavier. You have to make a variation somewhere. We have to keep a strong warp thread, and if you keep that at 30, or rather under 30 you have to sacrifice your filling. But if you keep the percentage of size the same I do not see why there would be any difference.*

*As to the twist multiple, I use 4.12. I put in 26 turns.*

*Mr. Wood: Undoubtedly in recent years there has been a tendency to increase the amount of size in warp yarns, which would cause you to run lighter fillings. Let's hear from the man from Ware Shoals on this point—Mr. White.*

*Mr. White: We are running about the same. We run 4.10 to 4.20.*

*Question: What about spun rayon, Mr. Chairman?*

*Mr. Wood: I have had no experience on that. Joe, can you tell us?*

*Mr. Lyons: We run 3.25 on 1 7/16 staple.*

### Lapping Up On Middle Roll

*Mr. Wood: Let's go on to the second question: "Have you had excessive lapping up on middle roll with long-draft spinning on cotton or on rayon? When creeling, do you find thick, soft places in the yarn? What remedies do you suggest?"*

*John S. Lockman: I should like to know if anybody here has had any of that lapping up of cotton on the middle roll. I have. If you have had it I should like to know what you do for it.*

*Mr. Wood: That was on long draft. What type of long draft have you?*

*Mr. Lockman: Casablancas.*

*Mr. Wood: How about the man from Calhoun Falls? Do you have that trouble?*

*(Continued on Page 26)*

## THE NEW H & B HIGH-DRAFT ROVING FRAME

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## S. C. Carders and Spinners Discuss Mill Problems

(Continued from Page 24)

*J. Manning Bolt*, Supt., Calhoun Mills, Calhoun Falls: We do if we do not keep our cotton right. If we keep the right stable of cotton we do not have much trouble with it, but if we get an uneven staple we do have trouble.

*John S. Lockman*: What type of cotton do you use?

*Mr. Bolt*: We do not have much trouble on our warp, because we use a better staple of cotton for our warp.

*Mr. Lockman*: What staple do you use on warp?

*Mr. Bolt*: From 1 1/32" to 1 1/16". We separate our cotton and keep the best staple for the warp.

*Mr. Lockman*: What number of yarn?

*Mr. Bolt*: 30s and 40s.

*Mr. Lockman*: On the 30s what is the hank roving?

*Mr. Bolt*: I will let Mr. Cooper answer that.

*J. A. Cooper*, Overseer Carding, Calhoun Mills, Calhoun Falls: 3.25.

*Mr. Lockman*: And you have 1 1/16" cotton?

*Mr. Bolt*: Not all.

*Mr. Lockman*: You sometimes might have 1 1/8"?

*Mr. Bolt*: Well, possibly so, but very little.

*Mr. Wood*: What hank roving do you run on filling?

*Mr. Bolt*: 4.50.

*Mr. Wood*: And you have the long-draft system in the card room, as well?

*Mr. Bolt*: Yes.

*Mr. Wood*: And in spinning?

*Mr. Bolt*: Yes, both. Casablancas system. I should like to ask a question there. Has anyone noticed whether most of the laps go around the top cot or the bottom cot?

*John S. Lockman*: Mostly the top.

*Mr. Wood*: What has been your experience, Manning?

*Mr. Bolt*: Mostly the bottom.

*Mr. White*: We have had considerable trouble at Ware Shoals with lapping on the top. It may be out of order to mention this, but our spinner worked out a different type of clearer board which he patented and which can be bought. It helps very much.

*Mr. Lockman*: Did it stop the end breakage or just stop the lapping up?

*Mr. White*: Stopped lapping.

*Mr. Lockman*: Are you sure it did not stop the end breakage? Have you made a test on that?

*Mr. White*: No.

*Mr. Lockman*: I can stop the lapping up, but I can not stop the ends breaking.

*Mr. Wood*: Mr. White, would you mind explaining that device?

*Mr. White*: It is a little wooden block on the front of the slat that fits down over the top apron and holds it tight and keeps it clean and keeps the top-clearer

waste from the front roll packed in tight against this block. The cover—the flannel—is glued on the board instead of being put on in the conventional way.

*Mr. Wood*: Thank you for that information.

*John S. Lockman*: What break draft have you between the middle and back rolls?

*Mr. White*: I can not tell you offhand.

*Mr. Wood*: Have you made any change in it, or is it just as it was put out?

*Mr. White*: Just as it was put out.

*A Member*: Mr. Cheatham can tell you what we use.

*Mr. Lockman*: How many teeth in your back roll?

*T. L. Cheatham*, Overseer, Calhoun Mills, Calhoun Falls: Twenty-six.

*Mr. Lockman*: How many on the middle?

*Mr. Cheatham*: I think it is 42.

I have had the excess lapping up, also. We find at times if our numbers vary or if it gets a little light, we have excess lapping. Or if the cotton gets a little short you will have it, or if the humidity varies. I have played with it for the last three months. Sometimes I can go through the room and there will probably be ten or twelve flags up for laps, we will say. Then when the wind changes and the atmosphere changes, if you walk through you will see probably a hundred.

*Mr. Lockman*: What is your draft ordinarily between the back and middle roll?

*Mr. Cheatham*: Twenty-one.

*Mr. Lockman*: I mean the break draft.

*Mr. Cheatham*: Oh, it is 1.26.

*Mr. Wood*: Thank you, Mr. Cheatham. I notice you mentioned the wind in that connection. I have found during my years in the mill that the wind has much to do with a lot of things.

The next question reads: "About what percentage of loom stops do you consider is caused from gouts, and what is the best method of decreasing gouts?" Who has made a test on looms in recent weeks or months in regard to the percentage of loom stoppages caused by gouts? Frank Lockman?

*Frank D. Lockman*: Mr. Chairman, I consider that about twenty-five per cent of loom stoppages come from gouts. That is according to tests we have made. Gouts in one mill will cause more ends to break than in another mill. A great deal depends upon how you size your stock, as to how many ends will break from a gout.

*Mr. Wood*: Thank you, Mr. Lockman. Manning, have you made a test in recent weeks on that?

*Mr. Bolt*: Yes, we have made a test on it. We find our percentage of loom stoppage from gouts runs around 25 per cent, regardless of how many loom stops there are.

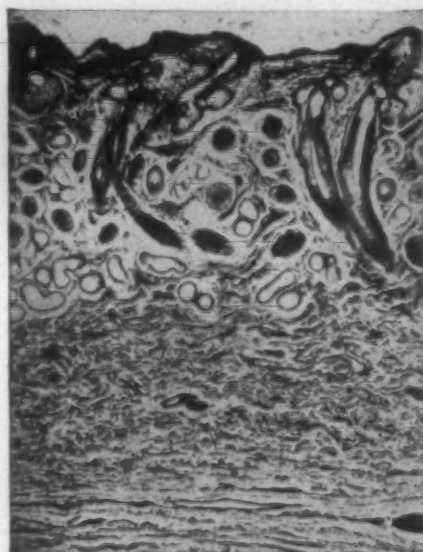
*Mr. Wood*: Mr. Sullivan?

*O. A. Sullivan*, Gaffney: We have not made a test recently.

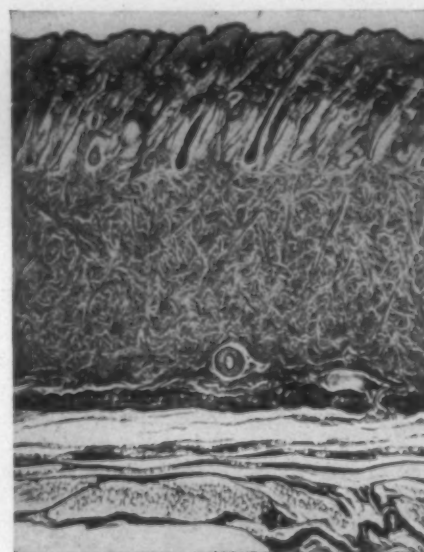
(Continued on Page 52)



# WHY HAS **GOOD** LEATHER REMAINED THE IDEAL ROLL COVERING FOR OVER 100 YEARS



MAGNIFIED CROSS SECTION OF SHEEPSKIN



MAGNIFIED CROSS SECTION OF CALFSKIN

Briefly the answer is that it is the **ONLY** material that can **CONSISTENTLY** pass the 12 POINT TEST under **ALL** of the great variety of conditions encountered at different times in cotton spinning.

Note that leather has a natural, positive drafting surface which does not require excessive weight to be effective. This surface is leveled out for uniform drafting by calendering, but is not destroyed.

Also note that the architecture consists of numerous interwoven fibres separated by minute spaces. Both the fibres and the spaces can be compressed, thus providing a dual cushion. Furthermore, pressure at any given point is distributed over the neighboring fibre structure, because of the inter-dependability of the fibres. That is why leather is never permanently flattened or fluted, when the spinning frames are idle, and why its rebound is

## THE 12 POINT TEST

1. does it automatically stop spinning when it makes bad
2. Does it retain its cushion and resiliency in low temperatures, as over the week-end in winter, and as long as it will draft?
3. Does it resist flattening or fluting over the week-end?
4. Does it require a standard diameter roller, thus eliminating costly changes?
5. Is it impervious to excessive humidity?
6. Does it produce a minimum of eyebrows?
7. Does it eliminate lap-ups as long as it will make good yarn?
8. Does it eliminate cockled yarn, other factors being correct?
9. Does it produce yarn of maximum strength for a given staple, other factors being correct?
10. Does it require a minimum of attention?
11. Does it function properly ALL the time until worn out?
12. Has time proved it any better than the 600 odd "improved" roller coverings that have come and gone?

almost immediate, when pressure is removed.

When the drafting surface of leather begins to wear off, the small fibres beneath it stick up and catch the cotton sliver breaking down the end,—an **AUTOMATIC** signal that the roller must be replaced. That is why **GOOD** leather **CAN'T** make bad yarn. It doesn't go on for weeks and months spinning weak, uneven yarn for lack of detection.

Gilleather is **GOOD** leather. In fact there **IS** none better. Give it a try and watch your **UTIMATE** roll covering cost go down.

## GILL LEATHER COMPANY

Salem, Massachusetts

*Southern Representatives*

Gastonia, N. C.—W. G. Hammer; Greenville, S. C.—Ralph Gossett; Greenville, S. C.—W. J. Moore; Griffin, Ga.—Belton C. Plowden

**GILL** SHEEP and CALF SKIN  
**LEATHER**  
*for TOP ROLLS*

# Southern Textile Association

## Has Successful Meeting

**G**OOD weather, a good crowd, a good program, and an assortment of activities that ranged from golf to horseshoe pitching, combined to make the Thirty-first Annual Convention of the Southern Textile Association, held at the Ocean Forest Hotel, Myrtle Beach, S. C., on June 16th-17th, one of the most successful in the history of the Association.

Opening on Thursday evening with the annual banquet for the associate members and their guests, the meeting continued throughout Friday and Saturday with everyone present enjoying the salt air, the convention sessions, and the sports and amusements.

The convention sessions were marked by the excellent addresses presented, most of which are published elsewhere in this issue. All of the speakers were thoroughly competent to speak on their subjects, and much favorable comment was heard from the listeners. Entertainment included the annual golf tournament, bridge, a setback tournament, horseshoe pitching, swimming, fishing, and floor shows at the banquets on Thursday and Friday evenings.

### New Officers Elected

At the Saturday morning business session, which terminated the convention, the following officers were elected:

President: P. B. Parks, Jr., superintendent of the Erwin Cotton Mills Co., Plant No. 5, Erwin, N. C.

Vice-President: Frank D. Lockman, superintendent of the Monarch Mills, Lockhart, S. C.

Chairman of Board of Governors: J. O. Thomas, Marshall Field & Co., Spry, N. C.

Executive Secretary: Marshall Dilling, superintendent

and secretary of the A. M. Smyre Mfg. Co., Gastonia, N. C.

B. Ellis Royal, of Charlotte, N. C., was reappointed secretary and treasurer.

New members of the Board of Governors—Joe Lyons, Jr., superintendent of the Orr Cotton Mills, Anderson, S. C.; T. C. Pegram, superintendent of the Erwin Cotton Mills Co., Cooleemee, N. C.; R. T. Stutts, superintendent of the Woodside Cotton Mills at Simpsonville, and Fountain Inn, S. C.; W. E. Hammond, superintendent of Bal-



J. O. THOMAS

Elected Chairman of Board of Governors, Southern Textile Association

four Mills, Balfour, N. C.; V. E. McDowell, overseer of carding at the Rosemary Mfg. Co., Roanoke Rapids, N. C.; J. Z. Lancaster, assistant superintendent of Pacolet Mfg. Co., Pacolet, S. C.

### Associate Members' Banquet

The opening activity of the convention was the annual and always enjoyable banquet of the associate members of the Association. William H. Randolph, Jr., the retir-

### Snapped At Random



Left to Right—

- (1) Gordon Cobb, Charlotte, N. C.; Webb Durham, Foster Machine Co., Charlotte, N. C.; Murphy Gregg, Springs Cotton Mills, Lancaster, S. C.; H. H. Willis, Dean, Clemson Textile School.
- (2) Arthur S. Jarrett, Highland Park Mfg. Co., Charlotte, N. C.; F. A. Decker, Textile Specialty Co., Charlotte, N. C.; Frank D. Lockman, Monarch Mills, Lockhart, S. C.; Ira L. Griffin, Stein Hall & Co., Charlotte, N. C. (seated).
- (3) "Smiley" Taylor, A. E. Staley Mfg. Co., Monroe, N. C.; T. C. Davis, Stein, Hall & Co., Charlotte, N. C.; Miss Leona Smith, Victor Ring Traveler Co., Gastonia, N. C.; Wm. P. Cargill, Pee Dee Mfg. Co., Rockingham, N. C.; Earle Mauldin, Textile World, Atlanta, Ga.; Mrs. M. T. Poovey, Rockingham, N. C.; Wm. H. Randolph, Jr., A. E. Staley Mfg. Co., Atlanta, must have gotten an order from M. T. Poovey, of Rockingham, judging from the big hug.
- (4) Fred Alexander, General Electric Co., Greenville, S. C.; R. T. O'Steen, Walker Mfg. Co., Greenville, S. C.; J. O. Corn, Pacific Mills, Columbia, S. C.; H. P. White, Saco-Lowell Shops, Greenville, S. C.



ing chairman of this division, acted as toastmaster for the large crowd of members and their guests. Officers and members of the Board of Governors of the Association were honor guests at this banquet and were introduced by the toastmaster.

New officers of the associate members' division were elected as follows:



**ERNEST J. EADDY**  
Vice-Chairman of Associate  
Members' Division



**HARVEY B. ROGERS**  
New Chairman of Associate  
Members' Division

Chairman—Harvey B. Rogers, Parks-Cramer Co., Charlotte, N. C.

Vice-Chairman—Ernest J. Eaddy, The Textile Shop, Spartanburg, S. C.

Secretary—Junius M. Smith, TEXTILE BULLETIN, Charlotte, N. C.

Featuring the banquet was an excellent floor show from Atlanta, with an excellent job as master of ceremonies performed by John Fonville, of Cotton, Atlanta.

#### Friday Morning Session

The convention was officially opened on Friday morn-

ing with L. J. Rushworth, president, presiding. In his address as president, Mr. Rushworth traced the beginning of associations and corporations back to the year 1199, when the first Merchants Guild was formed, and through the efforts of these guilds the Magna Charta was evolved. This address will be found on page 13.

Following the address of the president, Dr. E. R.

#### Finals in Setback Tourney



Seated, Left to Right—Gill Spratt, Charlotte Mfg. Co., Charlotte, N. C., co-winner; R. T. O'Steen, Walker Mfg. Co., Greenville, S. C.; M. T. Poovey, Hannah Pickett Mills, Rockingham, N. C., co-winner.

Standing, Left to Right—J. T. Phillips, Buck Creek Cotton Mills, Siluria, Ala.; C. B. Thomason, Ashworth Bros., Charlotte, N. C.; Frank O'Steen, Acme Loom Harness & Reed Co., Greenville, S. C.; Wm. P. Cargill, Pee Dee Mfg. Co., Rockingham, N. C.; B. Ellis Royal, Textile Bulletin, Charlotte, N. C.; C. W. Cain, Steel Heddle Mfg. Co., Greensboro, N. C.; George Snow, Atlanta Brush Co., Atlanta, Ga.

Schwarz, Professor of Textile Technology, Massachusetts Institute of Technology, spoke on the Fundamentals of the New Textile Technology. In stating the need for more fundamental research in the textile industry, and particularly in the cotton textile industry, Dr. Schwarz

(Continued on Page 33)

#### Officers and Board of Governors Present At Convention



Seated, Left to Right—R. T. Stutts, Supt., Woodside Cotton Mills Co., Simpsonville, and Fountain Inn, S. C., member board; Frank D. Lockman, Supt., Monarch Mills, Lockhart, S. C., vice-president; P. B. Parks, Jr., Supt., The Erwin Cotton Mills Co., Plant No. 3, Erwin, N. C., president; Marshall Dilling, Supt. and Sec., A. M. Smyre Mfg. Co., Gastonia, N. C., executive secretary; B. Ellis Royal, Textile Bulletin, Charlotte, N. C., secretary and treasurer; Virgil E. McDowell, overseer carding, Rosemary Mfg. Co., Roanoke Rapids, N. C., member board.

Standing, Left to Right—Joe Lyons, Jr., Supt., Orr Cotton Mills, Anderson, S. C., member board; B. M. Bowen, Supt., Salisbury Cotton Mill, Salisbury, N. C., member board; T. C. Pegram, Supt., The Erwin Cotton Mills Co., Plant No. 3, Cooleemee, N. C., member board; W. E. Hammond, Supt., Balfour Mills, Balfour, N. C., member board; L. J. Rushworth, Supt., Riverside & Dan River Cotton Mills, Danville, Va., retiring president; M. T. Poovey, Supt., Hannah Pickett Mills, Plant No. 2, Rockingham, N. C., member board; O. A. Sullivan, Gaffney, S. C., member board.



# Personal News

Wm. C. Zylstra has resigned as general superintendent of the Spencer Mills, Inc., Spindale, N. C.

C. C. Fisher is now superintendent of the National Weaving Co., Lowell, N. C.

M. B. Wallace, Jr., has been made assistant manager of the Nebel Knitting Co., Charlotte, N. C.

Arthur Phillips has been promoted from loom fixer to second hand of weaving at the Ladlassie plant of Gossett Mills, Anderson, S. C.

W. H. Busbee is now superintendent of the Adrian and Madora Mills of the American Yarn & Processing Co., Mt. Holly, N. C.

Edwin T. Cone, son of Julius W. Cone, of Proximity Mfg. Co., Greensboro, N. C., was salutatorian at the commencement exercises at Princeton University.

H. P. McElroy, formerly assistant superintendent of the Tifton (Ga.) Cotton Mills, is now general overseer of carding at the Bibb Mfg. Co., Columbus, Ga.

A. J. Wright, of St. Pauls, N. C., has accepted a position as overseer of spinning, spooling and twisting at the Hamer, S. C., plant of the Carolina Textile Corp.

T. H. Whitesides is now overseer of spinning at the Woodlawn mill of the American Yarn & Processing Co., Mt. Holly, N. C.

J. W. Quinn, general superintendent of the American Yarn & Processing Co., Mt. Holly, N. C., terminates his connection with that company on July 1st.

T. P. Taylor, formerly superintendent of the Adrian and Madora Mills of the American Yarn & Processing Co., Mt. Holly, N. C., is now superintendent of the Algodon Mfg. Co., Bessemer City, N. C.

J. S. Edmunds, formerly second hand of weaving at the Ladlassie plant of the Gossett Mills, Anderson, S. C., has been promoted to overseer of weaving at the same plant.

Cason J. Calloway, former president of Callaway Mills, LaGrange, Ga., was recently re-elected vice-chairman of the Regent's Board of the University of Georgia, Athens, Ga., for a two-year term.

Keil Howell, Jr., recent graduate in Textile Engineering from Georgia School of Technology, has accepted a position with U. S. Rubber Company. Mr. Howell is a member of Phi Psi, honorary textile fraternity.

J. Z. Lancaster, formerly overseer of carding at the Pacolet (S. C.) Mfg. Co., has been promoted to assistant superintendent of Plants 3 and 5 of the company. He has also been elected to the board of governors of the Southern Textile Association.

## E. W. Smith With Piedmont Color

E. W. Smith has become a representative of the Piedmont Color & Chemical Co., of High Point, N. C. He was formerly superintendent of the two rayon plants of the Central Falls Manufacturing Co., Central Falls, N. C.

## R. A. Watson Joins Onyx Oil & Chemical Co.

The Onyx Oil & Chemical Company, Jersey City, N. J., announces that R. Allan Watson has joined its staff as sales representative and mill consultant, covering the territory of Pennsylvania, Maryland, Virginia, West Virginia, Delaware and sections of New Jersey and New York.

Mr. Watson brings to his new connection a long and varied experience in almost every phase of textile work. He formerly was instructor in chemistry and dyeing at the Philadelphia Textile School. For eight years he was superintendent of dyeing at the Proper-McCallum Hos-

# PRECISION BOBBINS

**Uniform in Quality**

**Uniform in Size**

**Uniform in Finish**

**NEW ENGLAND BOBBIN & SHUTTLE CO.**  
**NASHUA** **NEW HAMPSHIRE**

iery Company, Northhampton, Mass. He has had, in addition, practical mill experience on yarns, piece goods and hosiery, plus a broad background of sales and demonstration work.

#### Ragan Returns To U S Bobbin

The U S Bobbin & Shuttle Company announces the return of D. D. Ragan to its Southern sales force. Mr. Ragan, who was a member of the U S organization prior to 1930, will cover the State of South Carolina. Mat Ousley, who has represented the U S organization in South Carolina, has transferred his operations to Georgia.

#### Banfield Vice-President Of Whiting Machine Works

Saco, Me.—At the last meeting of the board of directors of Whiting Machine Works, Whitinsville, Mass., Fred-eric E. Banfield, formerly of Saco, was elected vice-president in charge of manufacturing.

Mr. Banfield, after graduating from Brown University, taught at the University for a brief period and then entered the employ of the Saco-Lowell Shops at Newton, Mass.

Later he came here to succeed the late E. E. Blake as agent. He remained here 13 years, resigning July 1, 1935, to join the Whiting concern as works manager.

#### Harry E. Beck Joins Carter Firm

Harry E. Beck, who was formerly with Page-Madden Company for several years, is now with Mill Devices Company and Carter Traveler Company. Mr. Beck has traveled the South for many years. He has a host of friends that will be glad to know of his connection with the Carter interests. He will cover North Carolina, Tennessee and Virginia.

#### Barnes Textile Associates To Open Charlotte Office

Barnes Textile Associates, Inc., consulting textile engineers, with headquarters in Boston, will open a Southern office at 1409 Johnston Building, in Charlotte, on August 1st, with A. B. Moss, Jr., as Southern manager, it was announced by N. M. Mitchell, president of the firm.

Mr. Moss, who has already assumed his new duties, has long been identified with the textile industry of the South,

### HOUGHTON WOOL TOPS

Prompt Shipment All Grades on Short Notice

Suitable for Blends with Rayon or Cotton

HOUGHTON WOOL COMPANY

253 Summer St.

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Write or Phone Our Southern Representative

JAMES E. TAYLOR, Phone 3-3692 Charlotte, N. C.

# CLINTON STARCHES

FOR ALL  
TEXTILE PURPOSES

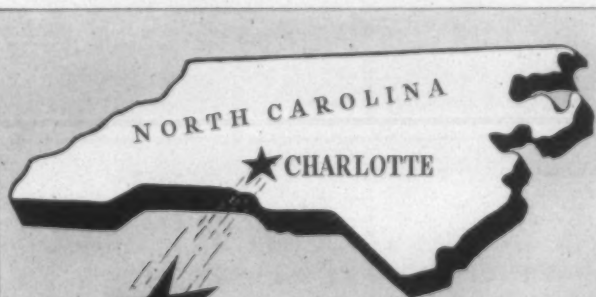
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CLINTON, IOWA

QUALITY

SERVICE



*A new office to serve*  
**DIEHL** customers

Mr. James H. Lewis is in charge at Room 617 Johnston Building, Charlotte, N. C.

We will continue to maintain southern district offices at 172 Trinity Ave., S. W., Atlanta, Ga., with Mr. S. G. Boyd as Manager and at Santa Fe Building, Dallas, Texas with Mr. Olin Duff as Manager.

## DIEHL

MANUFACTURING CO., ELIZABETHPORT, N. J.

Electrical Division of The Singer Manufacturing Company

SOUTHERN OFFICES: ATLANTA • CHARLOTTE • DALLAS

Textile Department

P. N. THORPE & CO. — 267 FIFTH AVE., NEW YORK, N. Y.



and has held responsible positions with some of this section's best known mills. His most recent connection was with the Whitney Mfg. Co., of Whitney, S. C., where he was general manager. Prior to that he served successively as assistant agent of the Merrimac Mfg. Co., of Huntsville, Ala., and assistant manager of Bemis Bros. Bag Co., Talladega, Ala.

Barnes Textile Associates, Inc., now in its twenty-seventh year, specializes in cost engineering, cost control, manufacturers' engineering service and general textile surveys. Mr. Mitchell, president of the company, was in Charlotte recently to assist Mr. Moss in making arrangements for the opening of the Charlotte office, which will serve the Southeast.

## OBITUARY

### JOSEPH F. CANNON

Concord, N. C.—Joseph Franklin Cannon, 62, prominent retired textile manufacturer of this place, was found dead June 21st in his hotel room at Hot Springs, Ark. He had been in Hot Springs for his health for five weeks prior to his death.

Mr. Cannon, who would have been 63 years old July 23rd, had not been in the best of health for several years, having suffered from heart disease.

At the time of his death he was president of the Citizens Bank & Trust Co., of Concord, vice-president of the Davidson Cotton Mills, at Davidson, and a director of the Wiscasset Mills, at Albemarle. He gave up his other business connections several years ago.

He was the son of the late James W. Cannon, pioneer textile manufacturer of this region, and Mary Ella Bost Cannon.

For many years he was associated with his father in the operation of textile plants here. He was also directing head of the Wiscasset plant.

He was a stockholder in numerous successful enterprises here and elsewhere. For twelve years he was president of the Cabarrus County Fair.

Surviving are his widow, the former Annie Ludlow, of Winston-Salem; a son, Joseph Franklin, Jr., of Charlotte, and two daughters, Mrs. Edwin A. Morris, of Abingdon, Ill., and Mrs. L. C. Plumley, of Germantown, Pa.

Other surviving members of the family are three brothers, Charles A. Cannon, of Concord; E. T. Cannon, of Asheville, and M. L. Cannon, of Charlotte, and four sisters, Mrs. David H. Blair, of Washington, D. C.; Mrs. Clark Howell, Sr., of Atlanta; Mrs. Hilar Lucke, of Winston-Salem, and Mrs. Edward Mattes, of New York.

### MRS. WALTER B. PRATT

Charlotte, N. C.—Mrs. Walter B. Pratt, whose husband is Southern agent for Joseph Sykes Bros., manufacturers of card clothing, died at her home in Charlotte June 25th.

Mrs. Pratt was a charter member of the local chapter of American War Mothers, of which she was formerly president. She was also active in the American Legion Auxiliary. Also surviving are three daughters, Mrs. A. L. Kleckley, Mrs. T. T. Patterson, and Mrs. A. H. Estridge, all of Charlotte; one son, Roy E. Stewart, of Asheville, by a former marriage, and seven grandchildren.

## U S Bobbin Moves Main Office To Greenville

Announcement is made by U S Bobbin & Shuttle Company that their main Southern sales and service office has been moved from Monticello, Ga., to the company's main Southern plant in Greenville, S. C. All communications previously addressed to Monticello should hereafter be sent to Greenville.

## Print Cloth Curtailment Plans Announced

Greenville, S. C.—Definite announcement that Southern textile mills will inaugurate a 25 per cent reduction in production of print cloth during the months of July, August and September was made a few days ago, as it was learned from J. E. Sirrine that manufacturers representing 95 per cent of the total production of print cloth had agreed to the voluntary regulation of production.

Curtailed operations are expected to go into effect July 1, it was said by Mr. Sirrine, who is chairman of a committee appointed some time ago by the industry to consider print cloth production and its relation to present market conditions.

Briefly, the plan recommended by the committee calls for a 25 per cent curtailment in production of print cloths, and also for limitation of sales during the three-month period to current production.

Some plants probably will suspend operations entirely one week out of each four for the next three months, it was said. Others will operate on 60 or 90 hour schedules weekly, rather than their present 80 to 120 hour weekly schedules. In some instances, it was said, approximately one-fourth of the mill's print cloth looms might be stopped during the three months.

Curtailment of print cloth mills of the South had been expected for some time, and the recommendations announced by the committee yesterday did not call for as drastic a reduction in production as had been anticipated in some quarters.

In the statement issued by Mr. Sirrine, it was said that curtailment was considered inevitable, and that the committee felt it best to reduce mill operations during the summer months when living costs are lowest.

Committee members also expressed the belief that the curtailment should be spread among the various mills as far as possible, and for that reason the agreement of manufacturers representing 95 per cent of the total print cloth production was required before recommendations of the group became effective.

The entire purpose of the regulations, it was said in the formal announcement, is to reduce over-production to a point where present stocks of goods can be absorbed within a reasonable length of time.

Members of the committee expressed the hope that the movement on the part of the mills would tend to keep production in line with demand, and that it would be continued until a reasonable market stabilization was accomplished.

Serving on the committee with Mr. Sirrine were D. W. Anderson of Pacolet, J. B. Harris of Greenwood, and E. S. McKissick and F. W. Symmes of Greenville.



## Southern Textile Association Has Successful Meeting

(Continued from Page 29)

said: "In the ultimate analysis, the old adage that a chain is no stronger than its weakest link, is no truer than that a fabric is no better than the fibers it contains. Truer still is it that no fiber is better than its weakest link—for all textile fibers are made up of long chains of molecules and the constitution and arrangement of these chains makes for the fundamental difference between fibers and hence between one textile and another."

This address will be found on page 15.

The final address of the Friday morning session was by H. H. Willis, Dean of the Clemson Textile School, and who is well known throughout the South's textile industry. Mr. Willis spoke on the importance of little things that are apt to be forgotten in the stress of competition, stressing the fact that satisfied help is one of the most valuable assets a mill can have. The address will be found on page 20.

The convention was not in session Friday afternoon, and the time was devoted to various sports and amusements, as noted earlier.

### Golf Tournament

The entry list in the annual golf tournament was smaller this year than has been the case in the past, partly because the weather was a bit warm and partly because some of the broken hearts received in the tournament over the Ocean Forest Country Club course two years ago had not had time to heal. However, the course has shown a great deal of improvement during the past two years, and some very creditable scores were reported.

Winners were as follows:

**Active Members**—Low gross, Henry Wood, Westminster, S. C.; second low gross, W. H. Miley, Jr., Erwin, N. C.; low net, F. Gordon Cobb, Charlotte, N. C.; second low net, P. B. Parks, Jr., Erwin, N. C.; high score, H. H. Willis, Clemson, S. C.

**Associate Members**—Low gross, Ed. Reid, Charlotte, N. C.; second low gross, Webb Durham, LaGrange, Ga.; low net, Fred Alexander, Greensboro, N. C.; second low net, H. P. Worth, Greenville, S. C.; high score, John M. Reed, Charlotte, N. C.

### Annual Banquet

The thirty-firs annual banquet, with a capacity crowd, was held Friday evening, with President Rushworth acting as toastmaster. The program was devoted entirely to entertainment and the presentation of prizes. P. B. Parks, Jr., did a very good job of presenting the prizes. There were 22 attendance prizes for ladies, ranging from bedspreads and sheets to silver service. The "wheel of fortune" was a bit cranky, but after spinning it backwards and tilting in every conceivable angle the prizes were disposed of satisfactorily.

A very good floor show was followed by dancing on the patio, with an excellent orchestra.

### Saturday Morning Session

The first speaker on the Saturday morning program was Dameron Williams, of Gastonia, N. C., whose subject

(Continued on Page 44)

1. Platt's Metallic Wire in place of flexible clothing. Where adaptable it will often increase production and uniformity of sliver, reduce frequency of stripping and eliminate grinding. Suitable for cotton, wool, worsted and rayon cards.
2. A new metallic feed roll for cotton and rayon cards, which maintains a firm hold on the lap, assuring even feeding and thereby reducing cylinder jams.
3. A specially developed lickerin wire for rayon cards.

Ashworth Products are dependable because of UNIFORM manufacturing methods.

Ashworth Service is dependable because of—

**3 FACTORIES**  
TALL RIVER, WORCESTER, PHILADELPHIA

**6 REPAIR SHOPS**  
TALL RIVER, PHILADELPHIA, CHARLOTTE, GREENVILLE, ATLANTA, DALLAS

**7 DISTRIBUTING POINTS**  
TALL RIVER, WORCESTER, PHILADELPHIA, CHARLOTTE, GREENVILLE, ATLANTA, DALLAS

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# TEXTILE BULLETIN

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## CLARK PUBLISHING COMPANY

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David Clark	- - -	President and Managing Editor
Junius M. Smith	- -	Vice-President and Business Manager
Ellis Royal	- - - - -	Associate Editor

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Contributions on subjects pertaining to cotton, its manufacture and distribution, are requested. Contributed articles do not necessarily reflect the opinion of the publishers. Items pertaining to new mills, extensions, etc., are solicited.

## The Minimum Wage

No cotton mill has ever moved from New England to the South because of availability of child labor in the South.

No cotton mill has ever moved from New England to the South because of longer hours in the South.

We doubt very much that any cotton mill has ever moved from New England to the South because of lower wages in the South.

The proposed minimum wage of 32½ cents will not be of any permanent advantage to New England mills.

We doubt that there has ever been in this country an abler or shrewder group of men than those who pioneered and built the great cotton manufacturing industry of New England, but many of their sons and grandsons, educated for the most part in high-toned universities, have become "softies" and have let a great industry slip away from them and now go whimpering and whining to the Federal Government, asking that it spank the bad boys of the South who have dared build cotton mills while the New England industry was crumbling.

With a few rare exceptions, there has not been a first class cotton mill dismantled in New England. Most of the 14,000,000 spindles which

have gone out of business were in antiquated mills and could only be designated as junk.

Although the South reached a peak of 19,500,000 spindles, less than 2,000,000 of the spindles came from New England mills.

It was not child labor, longer hours or lower wages in the South which caused the crumbling of the cotton manufacturing industry of New England, and if those who now whine, wish to locate the blame or make legitimate excuses to their stockholders they can find the causes close at home.

About twenty-five years ago textile labor unions, operated by professional racketeers, became active in New England mills.

Had the mills been still operated by the rugged men who built the New England cotton manufacturing industry, the racketeers would never have acquired a foothold, but with new ideas acquired from college professors, the mill managers began to yield. Some made closed shop contracts, in an effort to continue in operation, while others, thinking themselves smart, paid union leaders for protection.

Then began a period when the union labor leaders, in order to keep the employees in the mood to pay dues, had to promote a strike every time interest lagged and very soon the long continued operation of any mill was doubtful.

Bankers, realizing that the cotton mills of New England had come into weak hands and that union domination meant uncertain operations, withheld funds badly needed for modernization of the mills, and it was inevitable that many soon became inefficient and ready for the junk man.

About the same time, the legislature of Massachusetts and to some extent the legislatures of other New England States became infested with reformers, most of whom were developed by radical and socialistic university professors and a barrage of regulatory measures were laid down against the industries of those States.

While union labor and the reformers were wrecking the cotton manufacturing industry of New England, the South was making it hard for labor racketeers and was encouraging industry.

The South built its mills, for the most part, with new and modern machinery and the mill men of the South, not having any background of textile knowledge, set out to learn more about cotton manufacturing and became more efficient manufacturers than those who had charge of New England mills.

Not since 1924 has it been possible to employ any person under 14 years of age in a Southern cotton mill and for fifteen years after that date children of 14 years could be employed in any



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*Industrial Rayon Corporation proudly presents the unmatched product of its new Painesville plant, climaxing seven years of research and development costing \$2,000,000 and an \$11,500,000 investment in machine and factory construction.*

This announcement introduces a rayon yarn that establishes new standards of excellence. It marks the dawn of a new day in the rayon weaving industry.

This new yarn is spun, bleached, treated, dried and twisted before it is ever wound into a package or touched by human hands. It moves continuously forward through processing liquids, cleansing baths, and over drying reels

as a single thread until it has been completely prepared for the textile mill.

The new SPUN-LO for weaving is not just the result of surface changes or minor differences, but a yarn basically unlike anything ever before obtainable. It has proven itself under the stress and strain of loom and cutter. The great new plant has swung into full operation—a new standard of yarn excellence awaits weavers everywhere.

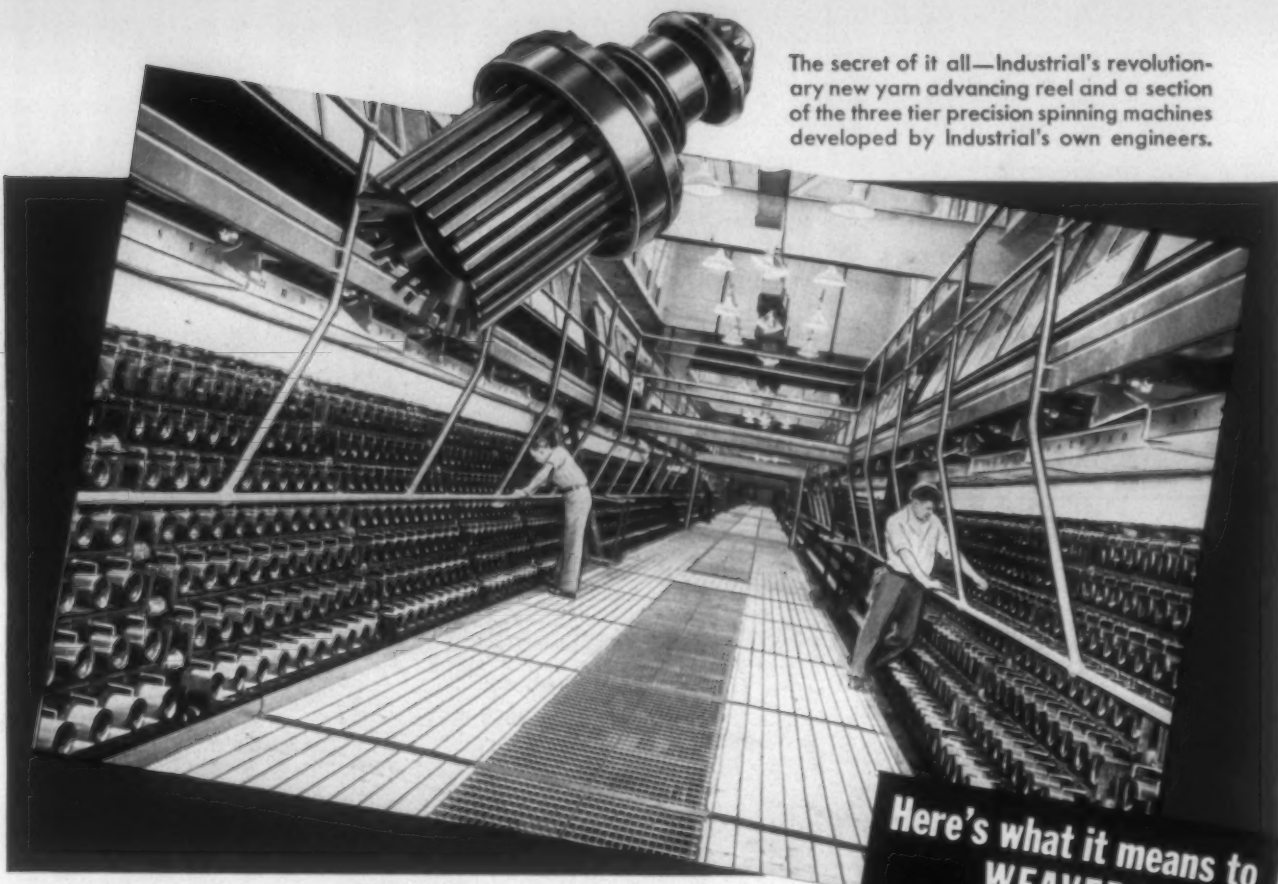
THE NEW

\*Spun-lo

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INDUSTRIAL RAYON CORPORATION

The secret of it all—Industrial's revolutionary new yarn advancing reel and a section of the three tier precision spinning machines developed by Industrial's own engineers.



## INDUSTRIAL'S NEW PROCESS ELIMINATES HANDLING AND TREATS EACH FILAMENT INDIVIDUALLY FROM START TO FINISH. AS A RESULT, HERE ARE SOME OF THE SPECIFIC YARN IMPROVEMENTS AND DEFINITE ADVANTAGES

- ① **PRACTICAL ABSENCE OF KNOTS.** Tests show it is common for the new SPUN-LO yarn packages to run knotless and unbroken in a 2½ pound cone.
- ② **A MINIMUM OF SLUBS, BROKEN FILAMENTS.** Among other things this reduces the bothersome "puff balls" behind weaving reeds.
- ③ **UNIFORMITY OF LUSTRE.** Both within the package and from package to package. Tests show no difference in the yarn turned out by the first and last machine in Industrial's new plant.
- ④ **UNIFORMITY OF DENIER.** The machine-controlled accuracy of each

step in the process makes this a certainty.

- ⑤ **UNIFORMITY OF DYEING.** The individual thread treatment and the resulting uniformity make for unprecedented evenness in dyeing.

- ⑥ **UNIFORM HIGH STRENGTH.** Actual tests show it to have a higher uniform breaking point than any other rayon yarn now regularly used in the weaving industry.

- ⑦ **CLEANER PACKAGE.** The physical cleanliness of this yarn makes for better running conditions in the mill, general improvement in cloth quality and fewer seconds.

### Here's what it means to **WEAVERS**

Less loom stoppage, fewer seconds, lower production costs, and an all around better cloth.

### Here's what it means to **CONVERTERS and CUTTERS**

Better woven cloth and less complaints about dyeing uniformity.

**T**HIS NEW SPUN-LO yarn for weaving is widely regarded as the most revolutionary advance in the art of making rayon for the weaving trade. To fully grasp its meaning and to make the most of its possibilities, plant superintendents, dyers, designers, and other expert technicians in all phases of the industry, are invited to acquaint themselves fully with the new process.

# Rayon FOR WEAVING

CLEVELAND • OHIO

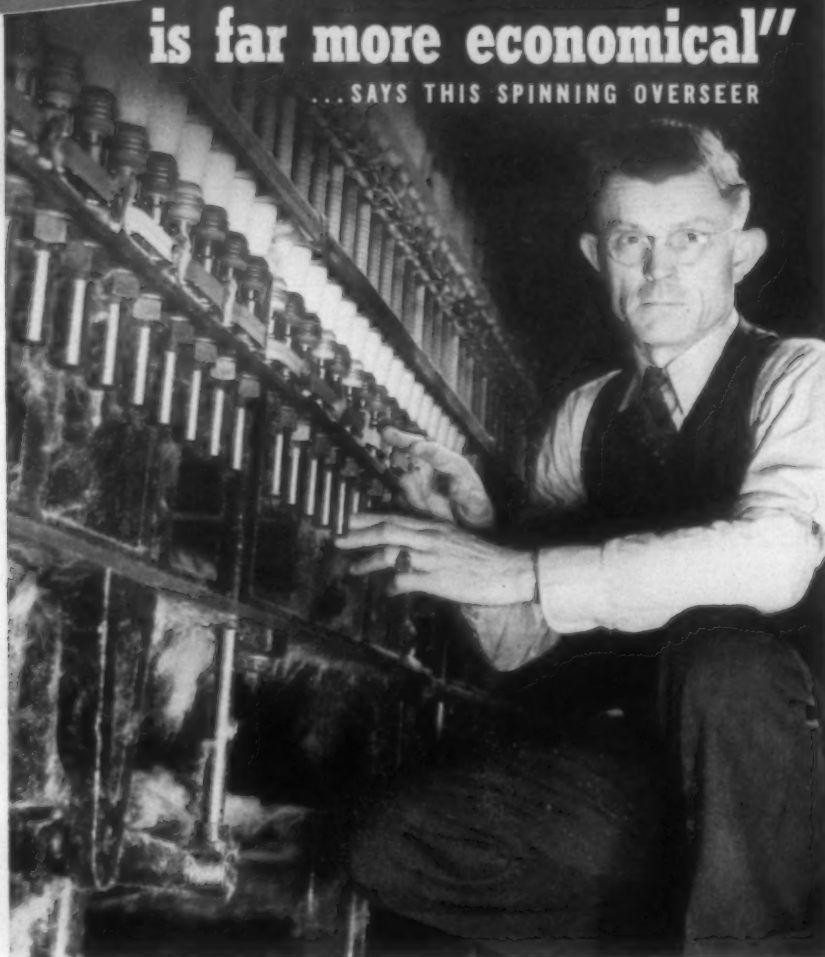
"We have proved that

**GULFGEM OIL**

is far more economical"

...SAYS THIS SPINNING OVERSEER

*"Our spindle lubrication  
is more efficient and our  
maintenance costs lower"*



"WE have proved to our own satisfaction that Gulf's higher quality lubricants are far more economical to use in the long run," says this spinning overseer. "We use nothing but GULFGEM OIL for our spindles and GULFCROWN OIL for our roll necks and saddles."

The wide use of these quality oils in mills throughout the country is largely due to this fact: they have been treated and purified by Gulf's exclusive ALCHLOR process! By the use of this famous refining process, oils with greater stability than any of which we have record can be manufactured. Thus long service with minimum deterioration and a low rate of consumption are assured.

Many mill managers are reporting appreciable savings in spinning room power consumption

after GULFGEM OIL has been adopted. Its high resistance to oxidation and gumming insures minimum friction drag in spindles — and lower power bills.

Ask the Gulf engineer who calls on you to recommend the proper grades of these higher quality lubricants for your equipment. You will be under no obligation. . . Gulf Oil Corporation — Gulf Refining Company, Gulf Building, Pittsburgh, Pennsylvania.





New England mill. No intelligent and informed man has, however, held that a financial advantage could be obtained by employing a child under 16 years of age.

Until the NRA went into effect Southern mills were operating 55 hours per week while, with the exception of Massachusetts, all New England States permitted operations of 54 or 55 hours. Since the NRA practically all Southern mills have operated 40 hours and yet New England lost far more spindles during this period than prior to the NRA.

Higher wages are always paid on goods requiring more skill and when New England went off of coarse and plain goods, such as sheetings and print cloths, their wage scale appeared higher, although in many cases Southern mills making fine goods paid higher wages than similar mills in New England.

In his testimony at the Wages and Hours Hearing, Russell T. Fisher, secretary of the National Association of Cotton Manufacturers, misrepresented the situation by presenting alleged statistics showing that 80-square goods were being produced in the South at a labor cost of 6.04 cents, whereas we are reliably informed that no Southern mill, even those equipped with long draft spinning and roving, can produce them at any such figure.

To carry his misrepresentation still further, Mr. Fisher compared the labor cost of 80-squares with the New England labor costs on combed lawns, voiles and 128 x 68 broadcloths, knowing that the labor on such goods was a much larger per cent than on 80 squares.

There were, unfortunately, a few Southern manufacturers who appeared as advocates of the proposed minimum wage.

Among them was Hyman Battle, of the Rocky Mount Mills, who has recently spent more than \$500,000 modernizing his mills and thereby has secured a very low labor cost and also has a water power. Mr. Battle apparently feels that he will benefit if the small yarn mills with which he competes and, which have not funds for modernization, are forced out of business. In connection with Mr. Battle's effort it is interesting to note that he is a very warm friend and supporter of President Frank Graham, of the University of North Carolina, who went all the way to Atlanta and testified for the 32½-cent rate, in an effort to strike another blow at cotton manufacturers.

Those New England textile manufacturers who have supported the proposed minimum wage, have given evidence of the belief that it will cripple Southern mills and that they and New England will benefit by the crippling.

They are, however, doomed to disappointment and many will live to sincerely regret their actions and their words because there is a natural differential between the North and the South, and New England labor will demand that differential.

The Wages and Hours Law is not going to stop the shrinkage of textile manufacturing in New England.

## A Worthy Adoption

We note the following with much interest:

York Harbor, Me.—Jonathan Daniels, editor of the Raleigh, N. C. *News and Observer*, was unanimously voted "an adopted son of New England" by the New England Council.

The tribute paid Daniels by the Council, an organization of industrialists and businessmen devoted to promotion of New England interests, was the first "honorary degree" ever conferred by it.

As stated in the dispatch, the New England Council is an organization "devoted to the promotion of New England interests" and quite naturally their greatest activities have been devoted to efforts to prevent industries from moving from New England to the South.

If we lived in New England we would be an active supporter of the New England Council but we know that it would not honor a citizen of another section unless they knew that he had rendered service to their objectives and we feel that Jonathan Daniels has fully justified his selection because he has certainly done everything that he could to prevent the establishment of industries in the South.

For the purpose of depreciating the South and to furnish arguments against moving to this section, he drove over the South, selected isolated but unfavorable situations and wrote a book entitled "A Southerner Discovers the South," although a better title for his book would have been "A Bird Fouls His Nest."

We once said editorially, "If an airplane could fly over North Carolina and drop a bomb on every textile plant, Josephus Daniels would die happy."

The same goes for Jonathan Daniels, "honorary member" of the New England Council.

## Headed Toward Collectivism

Unless present trends are checked and reversed, we are headed directly toward a collectivistic economic system, under which private enterprise in any true sense will cease to exist and genuine democracy will disappear.—*Texas Weekly*.

# Mill News

**HICKORY, N. C.**—Bailey Patrick, receiver, said recently the Henderson Hosiery Mills would be sold at public auction July 24th.

**CONESTEE, S. C.**—It has been announced by officials that the Conestee Mills, manufacturers of sheetings and drills until closed several months ago, will remain closed and will be sold. The mills are located seven miles from Greenville, S. C., and contain 17,000 spindles and a battery of 410 looms, with a capitalization of \$350,000. The company will be liquidated.

**CONCORD, N. C.**—A new warehouse to be used by Kerr Bleaching and Finishing Works here is now under construction and will be completed soon, according to A. G. Odell official of the firm.

The new warehouse, a large frame structure, is being built at a cost of approximately \$19,000 and is expected to go into use immediately upon completion.

**BIRMINGHAM, ALA.**—Charles A. Jones, president of Birmingham Textile Co., declares negotiations are still under way for the leasing of its mill to the Sanders interests, which operate six cotton mills in Mississippi. The success of these operations will determine whether the concern will be liquidated or not, Mr. Jones said.

He added that the Reconstruction Finance Corp. has tentatively approved a loan on the properties which would enable the textile concern to pay off a loan to the Federal Reserve Bank of Birmingham and to recondition the property.

**GROTTOS, VA.**—Property of the Grottoes Silk Mill, Inc., has been sold by J. S., Mary B. and J. M. Pirkey to the American Clifton Corp., of New York, for \$11,000, according to a deed recorded in the Rockingham County clerk's office at Harrisburg. It is understood the new owners will operate the plant. The property includes a large building, equipment and four acres of land. The Pirkey interests acquired the property at a trustee's sale two years ago. Equipment includes 40 Crompton & Knowles looms, 32 Draper looms, four warpers, seven winders, four Swiss quillers, two inspection tables and other equipment.

**ROSSVILLE, GA.**—Peerless Woolen Mills has begun construction of a block-long warehouse adjacent to its large mills here. The new building will be 300 feet long and 100 feet wide. It will be one-story in height, of frame construction with sheet iron sides and composition roof.

It was expected it would take about a month to complete the building, the estimated cost of which was \$10,000.

The new warehouse will be used for storage of raw materials.

**COWPENS, S. C.**—Federal Judge C. C. Wyche has signed an order scheduling a hearing August 15th on a proposed reorganization plan for Cowpens Mills.

The plant is involved in reorganization proceedings under Section 77-B of the federal bankruptcy act.

Stanley Converse, by virtue of a previous court order, is trustee.

For several months efforts have been under way to obtain a Reconstruction Finance Corporation loan for the industry. In order to permit ample time for loan negotiations, Judge Wyche has granted several extensions.

All stockholders and creditors of the plant are to be notified in compliance with requirements in the order.

**SOUTH PITTSBURG, TENN.**—Property of the Aycock Hosiery Mills here has been purchased from the Reconstruction Finance Corp. by the Star Woolen Mill of Cohoes, N. Y., officials of the company announced June 26th. The Star company will establish a plant here.

Officials were here from New York last week to inspect the property, which has been vacant the last six years.

As soon as the sale is approved in Washington, extensive repairs will be made to the plant by the South Pittsburg Chamber of Commerce. It is expected that installation of new machinery will be started by July 15th.

**ST. PAULS, N. C.**—The St. Pauls Cotton Mill Company, Inc., will be sold at public auction in Lumberton at noon, July 14, the transaction affecting more than 500 mill operatives and their families.

Three main buildings, 143 cottages and 89 acres of real estate will be auctioned off in the sale, authorized under a decree signed by Federal Judge I. M. Meekins of the Eastern North Carolina district. Equipment includes approximately 31,960 spinning spindles, 8,000 transfer spindles and 27 looms.

For the past month, the mill property has been in receivership. Prior to that time, the management had obtained permission to reorganize under the federal bankruptcy act, but had failed to get an RFC loan to finance a modernization program.

**GIRARD, ALA.**—Roy E. Martin and sons, Ed and Roy Martin, Jr., have purchased the Girard Mill of the Eagle and Phenix Company and approximately 90 dwelling houses.

Frank B. Bradley, vice-president of the Eagle and Phenix Mills, said the deal included all of the Phenix City unit of that mill. This is a two-story brick building on the Alabama side of the river, covering about two acres of land.

Mr. Martin said the mill will be used for industrial purposes, though he has not yet decided just what type. It is understood it will be for the manufacture of garments.

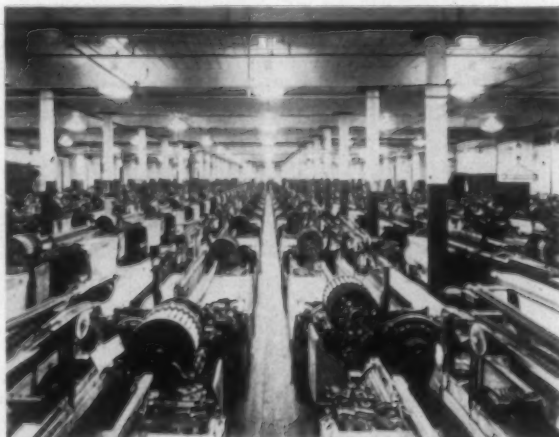


# MASTER MECHANICS' SECTION

## Maintenance of Lighting System

Cleaning carbon is very important in the operating efficiency of an automobile. Engineering skill creates a motor that is powerful and efficient, but only so long as it is kept reasonably clean. When carbon is allowed to accumulate, the motor becomes sluggish, inefficient, and costly to operate.

A lighting system is similar to an automobile in this respect. It is designed to produce so many footcandles of illumination on a given task, but, like the automobile engine, it also has its vulnerable spots which must be kept in good condition, otherwise the installation will become inefficient and costly to operate. However, the lighting



system produces no "knock" to call attention to itself when dirty. No matter how carefully designed a lighting system may be with respect to type and size of lamp and reflector, spacing of outlets, etc., good lighting will not be maintained unless the system is kept clean. It is therefore recommended that an illumination check with a light meter be made periodically, at least every month, and then when the illumination decreases to two-thirds of the original value, the lighting system be cleaned. In this way an adequate cleaning schedule may be determined. In addition to the cleaning of the lighting units, frequent paintings and maintenance of the surroundings—side walls, ceilings, machinery, etc.—will help keep the lighting efficiency near the original value.

In an average-size machine shop, illuminated with Glassteel Diffusers, having a ceiling and side walls with reflection factors of 30 and 10 per cent respectively, (a condition which is quite common) repainting the ceiling so that it will reflect 80% of the light striking it, and the side walls to a softer shade which will reflect 50% of the light, will increase the illumination on the work approximately 15%.

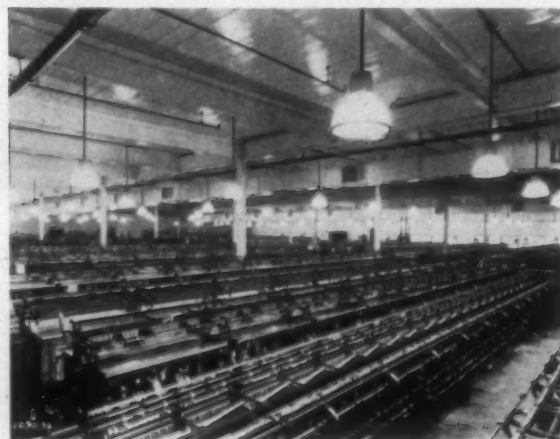
In a drafting room with indirect lighting where similar conditions might exist, painting to secure 80% and 50% reflection from ceilings and walls, will *triple the illumination!*

Repainting every few years can be justified from an economic point of view. It can not, however, be placed entirely on a dollars-and-cents basis. Environment plays such an important part in the morale and productiveness of the employee that repainting should be done whenever the interior appears dirty and depressing.

*Lighting For Production in The Factory.*

## Adequate Wiring Lowers Lighting Cost

Incandescent lamps are very sensitive to voltage conditions and they produce light most economically when operated at the normal voltage for which they are designed. So rarely is this understood that this fact gets little real consideration when the more immediate expense items, such as wiring or lamp renewal costs, are being studied. Unfortunately, lamps always will give some light under conditions where other electrical devices would refuse to operate or else their sluggish performance would cause immediate complaint. Yet a change of 1% in the voltage delivered at the lamp socket changes the output



of an incandescent lamp about 3% and a 5% drop results in a loss of about 16% in light output!

In the case of fluorescent lamps employing the ordinary type of auxiliary using no capacitance it may be said that a 1% change in socket volts results in a 2% change in lumens instead of a 3% change in lumens as with filament lamps.

For mercury lighting, where power interruptions or voltage fluctuations are frequent, combination lighting systems have an advantage over mercury alone. A drop in the supply of voltage exceeding 10% will extinguish



the arc of a 400-watt Type H-1 mercury lamp when operated on a single lamp transformer. A drop of 15% will extinguish the 250-watt Type H-2 lamp. Where an interruption occurs, the larger lamp requires 7 or 8 minutes to relight and the smaller one 3 to 5 minutes.

In the past, practically all branch circuits for lighting have been with No. 14 wire. Although this size can carry 15 amperes safely, it can not do so economically for any considerable distance. The drop in a branch circuit of No. 14 wire will reach 2 volts when it carries 15 amperes only 25 feet. This fact should, but unfortunately has not, prevented the extension of such circuits to runs of 100 feet or more with resultant losses far greater than they should be. In industrial service it is considered good practice to *limit each 15-ampere, 115-volt circuit to an initial load of not more than 1000 watts, to use no wire smaller than No. 12, or in certain cases, No. 10, and to allow no branch run to exceed 100 feet to the first outlet.* The wire capacity to be installed will, of course, vary with the character of the work done in the shop, but 6 watts per square foot is not an excessive allowance to make for areas where seeing is important.

For heavy-duty lamp circuits the load per circuit shall not exceed 1500 watts for No. 10 wire, 2500 watts for No. 8 wire, and 3000 watts for No. 6 wire.

There should be at least one convenient outlet in each bay in both manufacturing and storage areas.

In wiring a building that is to render service for a number of years, provision should be made for a probable increase in electrical requirements, by providing more wiring capacity than is actually required for the present needs. In general, the wiring capacity can be doubled for about one-third an increase in the cost.

Today the factory executive who is planning a relighting program is almost invariably confronted with a rewiring problem also. Fortunately, a recent change in the National Electric Code makes possible an increase in the capacity of the widely used 1/2-inch conduit. Formerly the Code specified 2 or 3 No. 14 wires or 2 No. 12 wires. Since 1931, however, the Code has permitted 3 No. 12 wires. This makes possible the installation of a 230-115-volt 3-wire common neutral branch circuit, replacing any previously allowed circuit and at least doubling the capacity of any 2-wire circuit which it may replace. The cost is low compared to many rewiring installations.

Lighting For Production in The Factory.

### Cleanliness—An Important Factor in the Handling of Ball Bearings

Dirt—ball bearing enemy No. 1. Because dirt is made up of myriads of diamond-hard particles, it forms a lapping compound when it becomes lodged in the closely ground ball tracks of a ball bearing and early failure is certain to result. Therefore, too much emphasis can not be laid upon this all-important subject of cleanliness.

When assembling bearings in a machine, it is a wise practice to refrain from ordering the bearings from the stock room until the unit is ready—this merely cuts down the time that the bearings must lie around the workbench. Under no circumstances should the protecting paper be removed from the bearings until the moment it is ready to be installed, for without the wax paper to protect it, metal chips, dirt, and even the dust in the air will in-

evitably get into the bearing and cause trouble.

Another thing to remember is that the heavy, slushing oil, with which a new bearing is coated, acts as an initial lubricant and should not be removed. If it is advisable to add an additional quantity of lubricant it is essential that the grease be absolutely clean. To insure this it is recommended that the cover be kept on the grease can at all times; that the instrument with which the grease is taken from the can be something along the nature of a steel blade which can be wiped off smooth and clean; and that where a grease gun be used, the nozzle and fittings be carefully wiped off.

A ball bearing has a mighty slim chance of giving trouble-free, dependable service if an individual with dirty hands uses messy tools and a dirty work bench when he is installing a bearing. It is an excellent idea to cover the bench with a sheet of clean newspaper on which to lay the bearings after they are removed from the box, and always have plenty of clean rags available which are free from lint and short strands that adhere readily to oily surfaces. Also, if, after a period of service, it becomes necessary to wash the bearings in order to remove deteriorated lubricant, always use clean solvents, and it is highly advisable to relubricate immediately with a light spindle oil. Also, revolve the bearing several times by hand to thoroughly oil the balls and retainer.

For those who follow these instructions a low cost insurance against noisy, rough-running, and short-lived ball bearings is provided. Where the way is so easy and the reward so great, it seems at best "foolhardy" to disregard these warnings completely.—*Fafnir Dragon.*

### Grease-Lubricated Ball and Roller Bearings

Bearings of this type as used in connection with power transmission in textile machinery are prepacked or provided with means for pressure grease lubrication. Their construction also includes suitable media to prevent leakage of grease and the possibility of contact with yarns or fabrics. Grease, in itself, is an effective sealing medium, provided it is of a comparatively heavy body. In textile service, however, it is best to rely on mechanical means of sealing the bearings, for heavy greases are prone to lead to abnormal power consumption. For this reason, a grease of low torque characteristics and medium consistency, which is capable of functioning under a wide temperature range has been regarded as best suited to the operating conditions.

A most important item in the maintenance of grease-lubricated anti-friction bearings concerns the method of application, especially when relubrication is necessary. Machinery builders have largely adopted the pressure grease gun for ball and roller bearing lubrication, suitable fittings for attachment of same being located on the bearing housings or connected thereto. This method of pressure lubrication is highly efficient in protecting bearings capable of retaining a grease charge without leakage. Unfortunately, however, entirely too much grease can be forced into the bearing housing if the pressure gun is not carefully handled.

This may readily lead to overheating, especially if the grease is too heavy. Such overheating is brought about by excessive internal friction within the lubricant itself.

With certain types of grease, abnormal increase in temperature may cause sufficient decrease in body to result in separation of the oil from the soap, thereby causing marked reduction in lubricating value and loss of oil by leakage if the bearing is not oil-sealed.

Where bearings of this nature are exposed so that operators may safely feel them, the conclusion may often be drawn that increase in temperature is due to lack of lubrication. On the other hand, where a bearing runs warm due to too heavy a grease, addition of more lubricant will only aggravate conditions. There will also be the danger of forcing some grease past the seals. For this reason operators should be carefully educated in regard to the lubricating requirements of ball and roller bearings, just as the management should be impressed with the folly of purchasing unsuitable products, often on a price basis. It is especially necessary for the operator to remember that bearings of this type have but a limited capacity for grease. To prevent too frequent greasing some authorities urge the use of plugs in grease holes instead of pressure gun fittings, the latter being inserted only temporarily at the regular time for re-lubrication. In this way careless or wasteful use of the grease gun is prevented.

There is no direct method by which the amount of grease applied to an anti-friction bearing can be accurately controlled. Certain types of bearings, however, can be vented to reduce the possibility of imposing the full pressure of the lubricating equipment upon the seals; these latter must, of course, be maintained in suitable condition with respect to the housing if they are to positively prevent leakage of lubricant under continuous operation.

This is of the utmost importance to the bearing manufacturer, the lubricating engineer and the operator. The selection of greases for ball and roller bearing lubrication used to be carried out more from the viewpoint of positive lubrication than power economy. The former is, of course, highly essential, but practical research into the comparative power consumption developed by certain types of greases in a rotating ball or roller bearing has indicated some very enlightening data. It has proved the desirability of combining the art of the grease maker with that of the mechanical engineer in the interest of more careful choice of grease ingredients. This has resulted in the production of greases capable of efficiently resisting separation when subjected to violent agitation and the effect of centrifugal force, with the least expan-

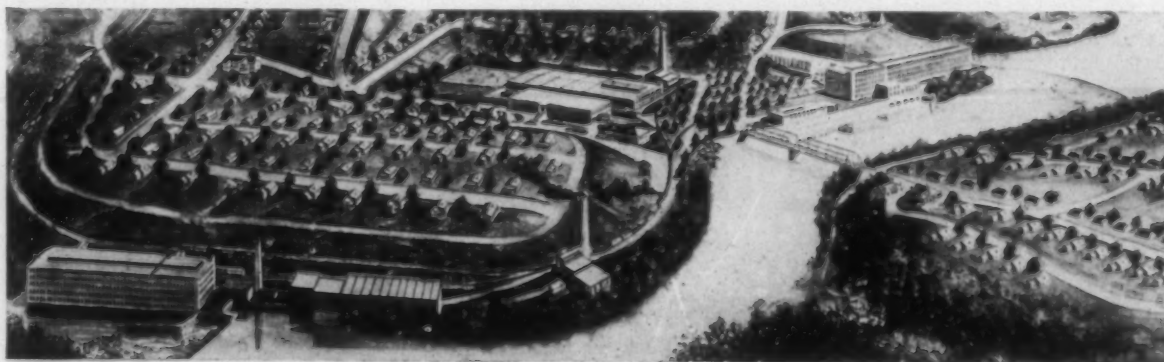
sion due to entrainment of air, and minimum torque or power consumption on starting and during operation. This latter is most desirable in textile service where several score bearings may often be involved on certain winders and spinning frames. Obviously, reduction of but a fraction of a horsepower per bearing, by use of a low-torque grease, will have a material effect upon the ultimate power consumption and the selection of the driving motor.

Good practice also requires that most careful consideration be given to designing a grease for this service which will effectively resist oxidation and gum formation and thereby relieve the bearing manufacturer of subsequent complaints due to corrosion or sticking of bearings in storage.

In other words, such a grease must be practically free from acid-forming tendencies if positive protection of the highly polished metallic surfaces of the balls, rollers and retainers is to be maintained. This necessitates a virtually neutral product and one which contains no fillers. Any tendency towards oxidation, decomposition, separation and development of free acidity may cause corrosion or pitting of the surfaces of the rolling elements. A grease compounded from a medium viscosity, highly refined, straight mineral oil and a soap which is suitable to comparatively high temperature service will give lowest starting and operating torque and best assurance against separation and oxidation.

To meet potential demands for bearing replacement in some localities, it is necessary for the manufacturer to keep a considerable stock of such bearings on hand of size and type conforming to the machinery used in each particular locality. Frequently this stock will involve many bearings which have been grease-packed at the time of manufacture. The length of time replacement bearings of this type may have to be stored may be often over a year. During this period of storage, the grease in the bearing must effectively resist chemical breakdown.

Extensive long time storage tests to determine the extent to which method manufacture or the nature of the fatty oil used may affect such breakdowns, have been carried on by certain of the bearing manufacturers and members of the petroleum industry. These tests have proved that choice of raw materials which are highly resistant to oxidation is a most important adjunct to ultimate stability of the finished grease. Method of manufacture is also believed to be a factor, especially in regard to temperature control.





## Southern Textile Association Has Successful Meeting

(Continued from Page 33)

was "King Cotton in the Doghouse." Mr. Williams, in addition to exhibiting a thorough knowledge of the cotton situation, turned out to be one of the best humorists ever heard at the conventions. His jokes and funny stories were tops in entertainment, and were brought into his talk in such a way that most of them illustrated some point he was trying to make. This address is found on page 22.

Sylvester Green, president of Coker College, Hartsville,

S. C., followed Mr. Williams with an address on Human Relations, in which he emphasized the value of persons in authority recognizing the feelings and sensibilities of their workers. He laid particular stress on the value of civic organizations and churches in promoting good will and friendliness in a community.

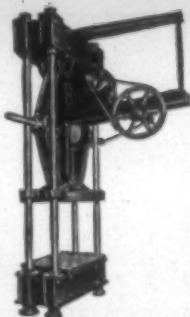
At the business session, which followed Mr. Green's address, officers were elected, as mentioned earlier, and a highly successful convention was brought to a close.

### Contributions To S. T. A. Entertainment Fund

The following companies contributed to the fund raised by the Associate Members' Division of the Southern Textile Association to help provide entertainment and golf prizes for the annual meeting at Myrtle Beach:

American Blower Co., American Cyanamid & Chemical Corp., Armstrong Cork Co., Ashworth Bros., Inc., Atlanta Brush Co., Barber-Colman Co., Barkley Machine Works, Borne, Scrymser Co., Ciba Co., Corn Products Refining Co., Cotton, Crompton & Knowles Loom Works, Dary Ring Traveler Co., Draper Corporation, E. I. Du Pont de Nemours & Co., Foster Machine Co., H & B American Machine Co., E. F. Houghton & Co., Howard Bros. Mfg. Co., Hubinger Co., Industrial Supply Co., Keever Starch Co., Montgomery & Crawford, Inc., Moreland Sizing Co., Manhattan Rubber Mfg. Div. of Raybestos-Manhattan, Inc., National Ring Traveler Co., New York & New Jersey Lubricant Co., Frank G. North, Parks-Cramer Co., Penick & Ford Sales Co., Robert & Co., Seydel-Woolley Co., J. E. Sirrine & Co., Southern Shuttles, A. E. Staley Mfg. Co., Steel Heddle Mfg. Co., Stein, Hall & Co., Stodghill Co., Taylor Instrument Co., Terrell Machine Co., TEXTILE BULLETIN, The Textile Shop, Textile Mill Supply Co., Textile World, Universal Winding Co., Veeder-Root, Inc., Viscose Co., WAK, Inc., Westinghouse Elec. & Mfg. Co., Whitin Machine Works, Whitinsville Spinning Ring Co.

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Switch with limit stops  
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Spartanburg, S. C.

Phone 2264

## New Static Card Stripper Announced

Canusa Corp., Arlington, N. J., announces a new stripping device which is said to decrease considerably the number of card stripping operations, as well as resulting in numerous other advantages.

According to the announcement by the manufacturers, cards equipped with the "Static Continuous Stripping Apparatus" have to be stripped only once at intervals ranging from ten to sixty hours, which means increased duration of card wires, belts, etc., and reduction in power particularly in comparison to stripping by vacuum. The device is said to be easily installed, and to have a negligible maintenance cost.

The "Static Continuous Stripping Device" is mounted on the side framing below the taker-in casing and has no moving parts. Its surface is set about  $\frac{1}{8}$ " to  $\frac{1}{16}$ " away from the card cylinder. The nature of the surface plate is a special compound which is extremely and peculiarly sensitive to electric static induction. The "Static" electricity is generated by the air pressure created by the cylinder in co-operation with the friction caused by the fibers. This "Static" electricity accumulates on the "Static" plate and the "Static" plate in turn attracts the fibers and prevents them from sinking into the base of the card wire.

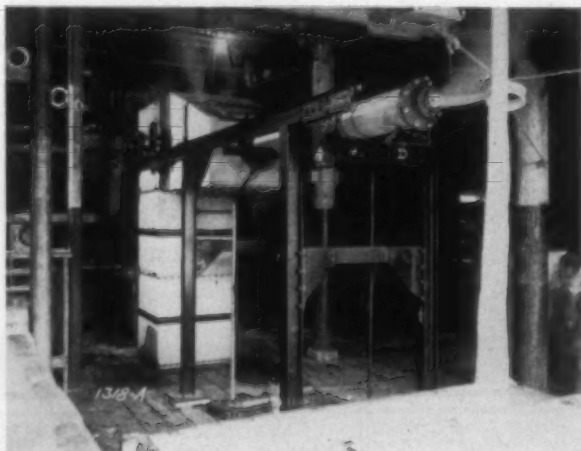


### Continuous Bleach Process Quickens Operating Speed

A new continuous bleaching process for textiles, employing peroxide as the basic reagent, is reported by the R. & H. Chemicals Department of E. I. du Pont de Nemours & Co.

The process is said to have been successfully applied to cotton piece goods lighter than sheeting. Market whites, dye-bottoms and colored yarn materials are handled with equal versatility, it is claimed, and on a wide range of fabrics, the results are characteristic of uniform and permanent whiteness, absorbency, mote removal, cuprammonium viscosity, and retention of fabric construction.

The goods are first saturated in rope form with the bleaching solution, passed continuously through a specially designed heating tube into a J-Box, where sufficient reaction time is allowed. From that point the ma-



terial is pulled through the usual type of paint washer on the way to the white bins.

"Previous attempts to bleach continuously have failed largely because the conceptions of the investors could only be projected to mill scale by constructing huge and cumbersome equipment," the company claims. Moreover, close control has been difficult or impossible. The du Pont process is said to lend itself to even closer control than batch methods now practiced commercially.

A completely continuous unit of production size has been operated in a New England mill. The bleaching unit consists of an upright stainless steel chamber. The small required floor space makes it possible for a bleachery to increase its output. The company claims that a production line schedule now may become a reality.

The speed with which the goods can be turned from the gray state into finished material ready for shipment is said to be a feature. Processing time can be reduced by a day or two depending on the existing plant facilities because only one to five hours are required to pass the goods from desize to sour to the white bins, it is stated.

Process and equipment patent coverage has been applied for. The new equipment will be constructed by The Textile Finishing Machinery Company, it is understood.

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- ★ Better Quality
- ★ Better Knitting
- ★ Proper Conditioning

LET US tell you about Laurel Emulsions and Softeners and how their application gives your yarns better knitting qualities... better softening, lubricating, conditioning, twist setting of processed or grey, carded or combed knitting yarns. Backed by over 15 years' experience in the treatment of cotton yarns for leading processors and spinners.

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102 spindles, 1896, 1899, 1899,  
1900.

14—H & B 7 x 3½ Fine Frames; 6  
of these 144 spindles, date  
4—1922, 1923, 1929.

Elizabeth City Cotton Mills  
Elizabeth City, N. C.

## 20,355 Bales of Cotton Found Tendered On May Futures

Washington.—The Commodity Exchange Administration reports that 20,355 bales of cotton were tendered in settlement of the 1939 May future on the New York and New Orleans Cotton Exchanges. This total represented three-tenths of 1 per cent of the total volume of trading during the life of the May future. There were 17,901 bales delivered on the New York Cotton Exchange contracts and 2,454 bales on the New Orleans Cotton Exchange contracts.

Deliveries at Houston on the New York and New Orleans contracts amounted to 11,438 bales, or 56.2 per cent of the total. At Galveston 2,677 bales were tendered, 1,777 bales at New Orleans, 1,770 bales at Mobile, 1,894 bales at Savannah, 99 bales at Charleston and 700 bales at Norfolk.

Low middling, middling spotted, strict low middling, and strict middling tinged were the principal grades delivered and accounted respectively for 6,152 bales, 5,244 bales, 2,919 bales, and 2,632 bales of the total tendered.

## Southern Cotton Leaders See No Aid in Deal for Rubber

Memphis, Tenn.—Prominent Southern cotton leaders have expressed disapproval of the United States' trade of 600,000 bales of cotton for British rubber, contending that it will prove costly and non-beneficial to this country.

"The deal tends to raise the price of rubber and keep down the price of cotton," said Fred Lucas, president of the Memphis Cotton Exchange, "because the British have to buy the rubber in the open market while the United States Government already has the cotton on hand. It is a poor precedent to establish, and I'm afraid it will prove very costly in the long run."

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Address "Leather,"  
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298 Hopedale Feelers.

128 Dobbies, 50 single index—78 double index.

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GREENVILLE BELTING COMPANY

Manufacturers of Leather Belting

Mill Strapping and Loop Pickers

## FOR SALE

4—H & B Roving Frames.  
8 x 4—160 spindles each. Excellent condition. Can be seen running in our plant at Kershaw.

The Springs Cotton Mills  
Lancaster, S. C.

## Cotton Research Body To Aid National Council

Hollandale, Miss.—President Oscar Johnston, of the National Cotton Council, disclosed here recently that the Cotton Research Foundation would become affiliated with the council soon.

"The National Cotton Council and the Cotton Research Foundation will co-ordinate their efforts and act in unison in developing new uses for cotton," Johnston said.

Spokesmen at council headquarters in Memphis said the Foundation, while maintaining its identity, would function as the research division of the council.

The research foundation operates through fellowships in the Mellon Institute of Industrial Research.

## Cotton Road Experiment Is Termed Success

Shelby County, Tenn., pronounced its experiments with cotton roads as "highly satisfactory."

The cotton fabric into which asphalt surfacing is poured was put down for a quarter mile north of the new Nonconnah Creek bridge, near Memphis. It has been in use for almost two years. E. W. Hale, Shelby County Commission chairman, inspected the road recently and said that it looked "good as new."

On roads adjoining the cotton fabric section, repair work has been necessary; however, on the cotton road section no work has been needed. Mr. Hale said the only flaw in the section was a soft spot, due to the setting of a fill.

"The cotton road is a success—there is no doubt about it," Mr. Hale said.

Cotton placed on the road bed keeps the asphalt from crawling. In place of the ridges that quickly form on other types of asphalt surface and result in pounding of the depressions, the asphalt bound with fabric holds its smoothness.

## Texas Offers \$10,000 For New Cotton Use

Austin, Tex.—The sum of \$10,000 as an award to any Texan who discovers a new use for cotton has been offered by the Texas Legislature. A condition in the offer, however, is that the discovery must increase consumption 300,000 bales annually.



## SELLING AGENTS for SOUTHERN COTTON GOODS

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## Cotton Goods Markets

New York.—The adoption of the print cloth curtailment plans and developments in the hearing to determine the minimum wage for the textile industry have held the spotlight during the past several days.

The announcement by J. E. Sirrine that sufficient mills had signed the agreement to curtail operation to put the plan into effect was most encouraging news in the market, indicating that the manufacturers are really in earnest this time about doing something about the unsettled conditions that have beset the industry for years. The entire plan is not to go into effect, it is understood, but the curtailment alone is sufficient evidence of good faith to have a stabilizing effect on the market.

Regarding the liquidation of stocks on hand at the present time at the mills, it is reported that the stocks are not to be "frozen," but are to be released in an orderly way, so that the mills will not be releasing at any time more than their normal 100% production. This will have the effect of reducing stocks without allowing more than full time production amounts of cloth to reach the market. Obviously this will eliminate any possibility of piling up stocks providing the market will absorb the full time production.

Toward the latter part of the week ending June 24th, activity in the staple gray goods market took a sudden upturn, with narrow sheeting leading the movement. The bag trade was contracting freely for summer delivery, with the opinion expressed that this was in some part due to the likelihood of a price advance soon.

Interest in print cloths also quickened. Although only a few million yards were reported contracted for in the closing sessions, mills turned down bids for larger amounts and were particularly not interested in accepting forward business at the present levels. Some observers commented that the prices of major constructions were about ready for another eighth of a cent rise in the immediate future.

The fight by the South's mills against the establishment of the 32½-cent minimum wage without a differential between the North and South continues to hold the interest of the mills. A large contingent of mill representatives are appearing before Administrator Andrews in Atlanta to protest and to present their case. There is little doubt that such a minimum would result in substantial unemployment among the smaller and weaker mills.

J. P. STEVENS & CO., Inc.

*Selling Agents*

40-46 Leonard St., New York

## Cotton Yarn Markets

Philadelphia.—The relatively strong position of the cotton yarn market, which has surprised and very highly pleased manufacturers during the past couple of months, is apparently still further improving. Unusual activity on the part of consumers apparently is the main factor in this continued improvement, together with the strong cotton market.

Advances of half a cent have been registered in combed yarns during the past week, both in two-ply skeins and warps and single on cones. While this is not enough to put the manufacturers in a position to show a reasonable profit on operations it is felt, it is a step in the right direction, and with predictions that the yarn market will continue strong throughout the summer, there is the possibility that the mills will be able to move up their prices to a point where they will be able to show a profit.

One of the most promising conditions existing at the present time is the unusual activity in the underwear field, where it is reported that business this spring has been so active that plans for fall have had to be deferred. It was reported by one large manufacturer that it would be after the Fourth of July before he would be able to terminate his spring business.

This is an unusual condition and at the same time an extremely favorable one for the cotton yarn market. And if business continues to be as good on underwear lines as it has been, the spinners will get better business and there may be a chance for a gradual increase in prices. Given this increase of from 1½ to 2 cents, the yarn mills can cut operating losses and, perhaps, make a little profit.

At present, asking prices continue very firm and distant deliveries are not sought for. Inquiries have been coming in, it is reported, from several sources, in what is termed a satisfactory manner. When buyers find they cannot get concessions, they are buying for from 30 to 60 days. What it usually a dull time of year is not considered dull this season, and it is thought that, perhaps, present activity is making up for the dullness through 1938 and the early part of 1939.

### SELLING AGENTS for SOUTHERN COTTON GOODS

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*Selling Agents*

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Reg. U. S. P. O.

Last Longer, Make Stronger Yarn, Run Clear, preserve the SPINNING RING. The greatest improvement entering the spinning room since the advent of the HIGH SPEED SPINDLE.

Hicks, American, Wilson  
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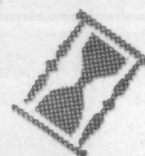
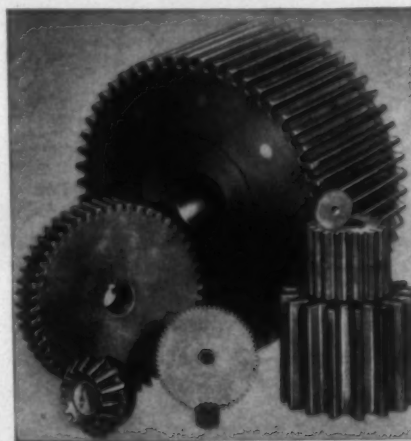
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and others

*Manufacturers of Industrial  
Gears for the South*

*The SLAYSMAN CO.*

801-813 E. Pratt Street

Baltimore, Md.



## "King Cotton" in the Dog House

(Continued from Page 22)

ested sections of the trade we have made great strides in regulating the procedure with respect to classification of cotton. That is, we have in grading, stapling and classification for "Preparation." We are, however, far from the goal in this matter of classification of "Character" and, apparently, this as yet loosely defined characteristic enters into the picture to a marked extent.

Cotton in its growing is subject to many hazards. Seed selection, quality of the land, weather, physical handling—all these things and many more contribute to the hazard. In setting up standards for grade, the Department of Agriculture and the trade has sought to establish standards calculated to reflect the normal or the average of crops. In this they have succeeded remarkably well. The grade standards you receive your cotton on are set up by the Department with the co-operation of the American mill and cotton buying interests together with the advice and assistance of the foreign countries buying cotton from us.

### Science of Grading Accurate One

The science of grading cotton is a fairly accurate one. When we come to an approximation of staple we have a "horse of another color." The government has set up physical standards for staple with graduations of a thirty second of an inch. You may find your staple standards varying at times. When you take into consideration, first, that some 50 bales of cotton are used, for instance, in the making of enough standards for  $1\frac{1}{8}$ . You can readily understand that variations are bound to occur from one bale to another. Secondly, the determination of the actual staple length of a bale of cotton is effected by the segregation into a bulk of the preponderance of fibers of that particular length found in a "pull" of cotton. This preponderance, as we call it, is relatively a small part of the whole. In the  $1\frac{1}{8}$  type, for instance, I doubt if over 18 per cent is  $1\frac{1}{8}$  and that is the greatest preponderance in the whole, the balance being longer or shorter. The shorter the cotton the greater the preponderance, the longer the staple, the smaller the preponderance. Whenever a cotton classer, using hand, eye and experience bulks a greater or a lesser amount of what he considers a "preponderance" in the "pull" we have "shy" or "full" cotton depending on how he is feeling, the condition of his stomach and whether the moon is full or quarter.

The "Preparation" of cotton affects, particularly, those of you who use the longer staples, that is, about  $1\frac{1}{8}$  and up. When you buy cotton shorter than  $1\frac{1}{8}$  the regular government grade standards cover the question of grade and preparation, that is, the degree of smoothness. When you buy  $1\frac{1}{8}$  and longer you buy on the established types for preparation "A," "B" and "C." These types are made up from staple cotton. Recently the government has tentatively agreed to types which will not only represent the preparation of staple cotton but will, at the same time, reflect more nearly the color of such cotton. The shorter cotton standards do not represent the color of cotton found in the staple sections of South Carolina and in the Delta of Mississippi.

## "Character" in Cotton

I now come to the discussion of "Character" in cotton. For the first time I feel perfectly safe in that I am much at sea with respect to this characteristic and I have the comforting feeling that no one else knows anything about it. Exact definition is impossible. Such terms as strength, diameter of fiber and other descriptions of like nature are used in attempting a definition.

I am sure of my ground in making the statement that "Character" is by far the most important consideration in attempting to fit cotton to your needs in yarn or cloth.

My own firm has found a polarizing light machine or "Polarizing Microscope" of great value in the attempt to arrive at some method of classifying cotton for character. With this machine we can determine the presence or absence of immature fibers and can gain some information as to relative size of these fibers. Character seems largely to be determined by these considerations and with this machine a "pull" or a small array of cotton is laid out under the microscope. The presence of immature fibers is noted by a distinct yellow color whereas the mature fibers are of a purple tint. It is not of course practical to try to class every bale in a shipment with this machine but we can and do gain an excellent idea of character with respect to some particular growing locality or in relation to the crop of any one year.

A discussion of this microscope leads to the consideration of proper classing facilities generally. Your cotton classer cannot judge these qualities I have spoken of to advantage unless he is given the proper room and proper facilities generally. Since I am familiar with our own facilities I again refer to them. We have in our Greenville office a large sample and classing room. By using an air conditioning machine we are able to maintain a constant of conditioned air—not moisture. The room is kept at a temperature of 70 and at relative humidity 60. The normal moisture content of cotton is  $7\frac{1}{2}$  to 8 plus. Paint on the walls, lights and other facilities are constructed strictly along lines recommended by the Government.

After your cotton has been classed I note one practice on the part of mills, generally, which presents to my mind a difficulty. I refer to the practice of mixing cotton from various shippers and from various sections. On the one hand I can see an advantage but when your good and your bad cotton, your weak and your strong characted cotton is mixed up, you may get certain results while on the other hand you are never in position to know exactly where your good cotton is coming from—from which section you would naturally want to buy more—nor would you know where your inferior cotton is originating.

The cotton merchants and the cotton mills have a joint responsibility it seems to me in that we have got to lend our efforts toward an improvement in cotton. Much has already been done. Much more needs to be done. Seed care, plus the planting of seed calculated to fit your needs in staple, care in picking and ginning and in the preparation of the bale itself—these things pay dividends to the producer and make for better running conditions in your mill. We cannot and should not, in my judgment, leave all this to the government.



### King Cotton in the Dog House

I now want to discuss briefly the plight of King Cotton. The scene opens to show a large and well fitted up dog house. Inside is the king. Whether he is going to get out or not is hard to say.

It has been necessary for me to become a detective in order to find out why the king is in the dog house. I want to lay the blame squarely at the door of a Secretary of Agriculture who was, so it turned out, the most expensive Secretary of Agriculture the world has ever known. And I don't refer to that very likable and genial secretary of ours, Henry Wallace. When you get home, dig around the house and see if you can find your Bible. Then go back to Genesis and read the story of Joseph and his reign as Secretary of Agriculture under Pharaoh. You recall that Joseph laid up supplies in the fat years and doled them out in the lean years. The Ever Normal Granary Idea was born right there. Since that time, the idea crops out from time to time. We see an opportunity to defeat the law of supply and demand. It becomes evident to us that all this talk about not being able to make water run up hill, naturally, is just so much foolishness. We also develop the positive assurance that we can have our cake and eat it.

Blame this on Joseph. He got away with it. Unfortunately, we haven't stopped to consider that the conditions under which Joseph operated are about 150 per cent different from the conditions we face.

But let's see how Joseph's idea has come on down through the years.

You recall that England got all fired up over the possibilities of controlling all the rubber in the world. She bought it and stored it and loaned on it and generally tried to develop a monopoly. The plan collapsed just as soon as other countries started competing, and the net result was a hangover and enormous monetary loss, particularly on the part of the producers.

Then our southern neighbor, Brazil, started reading the Bible I presume, and started out to control the production of coffee. The plan collapsed with consequent heavy losses and one of the results was to start the fish in the Atlantic Ocean on the road to being coffee fiends, for that's where they had to actually dump a lot of their excess.

Japan came along and tried to make a silk worm lay two eggs where it only laid one before. She tried to develop a monopoly. She, like England and Brazil, figured that they could ignore world prices and world production areas other than their own. That plan collapsed.

Along came our late lamented Farm Board in the early thirties. With all this history back of them, they started out to peg the price of cotton at 16 cents and succeeded in pegging it down all right—to 4¾c. What you might call pegging in reverse. They bought cotton and stored cotton and loaned on it and just about went busted as we all know.

(Continued on Page 54)



## DENMAN LOOM PARTS

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## S. C. Carders and Spinners Discuss Mill Problems

(Continued from Page 26)

*Mr. Wood:* Do you think it would be about the same in your mill? What is your opinion?

*Mr. Sullivan:* It ran higher.

*Mr. Wood:* What method do you use in your mill for keeping down gouts?

*Mr. Sullivan:* The big thing is to set the guides closer on the spooler to control the yarn.

*Mr. Wood:* Do you have an overhead cleaning system?

*Mr. Sullivan:* Yes.

*Mr. Wood:* Do you have it, Mr. Lockman?

*John S. Lockman:* Yes.

*Mr. Wood:* Do you have it, Manning?

*Mr. Bolt:* No, we do not have it.

*Mr. Cottingham:* What do you think about installing cleaners on spoolers?

*Frank D. Lockman:* I have not made a test, but we have fewer gouts in the spinning room since we installed the cleaning on the spoolers. We do not have as many wild fibers.

*Mr. Wood:* Joe, what is your experience? Have you overhead cleaners?

*Mr. Lyons:* Yes, but we went from short draft to long draft at the same time we put them in. I think it helped some.

*Mr. Wood:* Let's go on to the next question. "Does anyone now condition warp before spooling?" Someone wanted that question asked. Does anyone in the room condition it? (No response.) The fellow that asked that question can be satisfied now that he is the only one that does.

Question 5 reads: "Has anyone had experience with the new breaker-type snick plate on Barber-Colman spoolers?"

*John S. Lockman:* I saw it at Greenville. I have had no experience with it. It looks good.

*A Member:* I should like to ask what setting is most frequently used for the snick plate on the Barber-Colman spooler for 30s yarn.

*Mr. Wood:* What is the best setting for the snick plate on the Barber-Colman spooler?

*Mr. Cheatham:* .030.

*Mr. I:* We use .030, too.

*Mr. J:* We use .028.

*John S. Lockman:* We use, on the Barber-Colman, .030.

*Mr. Wood:* We come now to question No. 6: "How many yards of bvs filling should be put on an 8" bobbin?" Some of you fellows who are running 8" quills answer that question.

*A Member:* That would be determined by the size of your shuttle and the diameter of your ring.

*Mr. Wood:* Yes. I imagine probably it is a 2" ring. Some of you run 30s on 2" rings, though that is a pretty big ring. If the person who asked that question will clear that up he can probably get some information.

*Mr. Cottingham:* We had some tested this week. One plant put on from 1985 to 2100 yards. That was with a 1 3/8" ring.

*Mr. Wood:* Mr. McNeill, how many yards do you put on an 8" bobbin? Say with a 1 3/8" ring.

*Mr. McNeill:* On a recent test, Mr. Chairman, we were doing just a little better than 2000 yards.

*Mr. Wood:* Mr. Cheatham, what are you putting on? You have an 8" quill.

*Mr. Cheatham:* 2800. Our numbers run around 42 1/2s.

*Mr. McNeill:* That is about ours—41s to 43s.

*Frank D. Lockman:* That brings up a question in the weave room. What is the diameter of the shuttle, up and down, and across?

*Mr. Wood:* What is the diameter of the shuttle, two ways? Mr. Crow?

*Mr. Crow:* I do not have the 8" bobbin. My yarns are all fine yarns, too. We try to have at least one inch of clearance between the end of the quill and the throat of the shuttle, where it approaches the eye. Our experience has been that with too much opening at the end of the quill, particularly on fine yarns, too much clearance between the end of the quill and the eye of the shuttle, the ballooning is too great there. That causes breaks. We have our shuttle chambers made so we have about one inch of clearance between the end of the quill and the eye. Our filling is made on a 1 1/4" ring, and I believe the depth of my shuttles is 1 5/16" on one side and 1 3/8" on the other. One side of the shuttle is a little higher than the other.

*Frank D. Lockman:* I should like to know what diameter of shuttle Mr. Cheatham uses—the breadth and depth.

*Mr. Wood:* Manning, can you answer that question for Mr. Cheatham?

*Mr. Bolt:* The opening in my shuttle for an 8" quill is 1 1/4". I do not know just what the depth of the shuttle is. I have gotten only a few 8" bobbins and only a few looms for the 8" quill. We are just preparing to go on that.

*Mr. Wood:* Here is a question that was sent up. "I should like to know if there is anyone here that is having trouble with the spindles wearing vat-sided or oval-shaped at the top of the spindle, where the bearing in warp bobbins fits the spindle snugly. What can be done to prevent such trouble?" That is wearing of the spindle, as I understand, right where the bobbin fits snugly. Have you had any experience with that type of trouble on your spindle?



*Frank D. Lockman:* I can tell you what I think does it. I think it is on account of people having their bobbins made just a little bit too loose at the top and tight at the bottom. I have for years and years tried to have my bobbins always made a tight fit on the top, and I do not have any of that trouble and have not had any for quite a while.

*Mr. Wood:* In other words, to prevent that you would have the bobbins fit snugly at the top as well as at the bottom. Is there anything else on that?

If not, that ends the discussion, and I thank you for your co-operation.

*John S. Lockman:* Would you let a fellow ask a question?

*Mr. Wood:* Yes, sir.

*Mr. Lockman:* I should like to ask what method you use about bolsters when the spindle begins to shake. Is there anything you can do to make those bolsters run all right?

*Mr. Wood:* I think Mr. Cheatham ought to be able to answer that question.

*Mr. Cheatham:* The experience we have had at Calhoun Falls with shaking spindles is that when we went off the small package on to the larger package, which a great many mills are doing, in doing that the spindle was overloaded; and the only way we have been able yet to get away from it is to put the proper spindle and base and bolster there to take care of that.

*Mr. Wood:* Your answer would be that as you heavy up the package you have to heavy up the spindle and bolster in the same proportion?

*Mr. Cheatham:* Yes, sir.

*Mr. Lockman:* As that bolster becomes worn and the spindle begins to shake, can you put that bolster anywhere else and make it run, Mr. Cheatham?

*Mr. Cheatham:* I have been trying for two years and have not been able to do so.

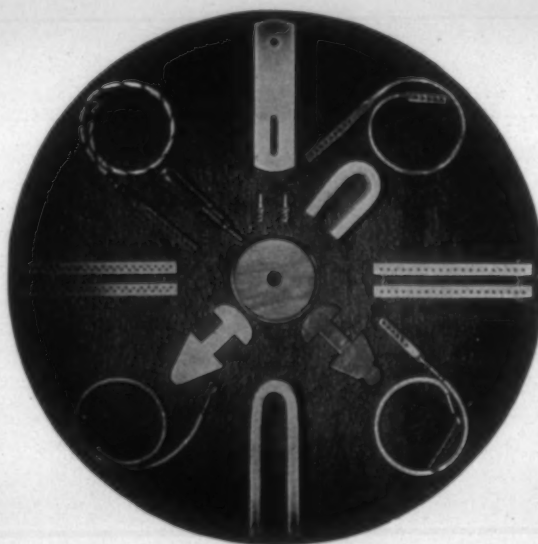
*Mr. Lockman:* In other words, Mr. Chairman, I should like to know if there is any way to fix a worn-out bolster?

*AMember:* I guess Mr. Lockman already knows this. You can take out the key on the end of the bolster and grind it down to fit, and then it will wear out before it shakes again.

*Mr. Hammond:* We tried to go to a larger package on the small spindle. I went from  $1\frac{1}{8}$ " bearing and changed the entire bearing to  $1\frac{7}{8}$ ", to give it longer holding on the bearing shafts. They told me it would eliminate that trouble. Some of the machine builders are doing a regular job reworking them. I think you have to have a uniform rate of turn. You get one turn every six seconds. There has been a question in my mind as to whether spindles are made as hard as they used to be, but I think the larger package has a great deal to do with it.

With no further business to come before the meeting, it was then adjourned.

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## "King Cotton" in the Dog House

(Continued from Page 51)

Now strange things happen in this country. If it were not for the fact that there is a tragic side, our performance would be a sort of second edition of Hellsapoppin. Fortunately we have lots of money and plenty of room to make costly mistakes in.

With all this past history in mind we started out again, after the collapse of the Farm Board. Did we learn any lessons? We did not.

### New Era or New Error?

I should say that with the start of the Farm Board and the Agricultural Adjustment Act in this country a new era was at its beginning in agriculture. But I would spell it *error*.

The triple A seems to be about the best piece of cotton legislation ever passed for the benefit of the Brazilian cotton producers. They don't need a Congress as long as we have one.

Now here are a few things which would well fit in a musical comedy were it not, as I have said, that we are dealing with a serious subject.

First, we have seen millions appropriated one year to buy planting seed for cotton farmers. The following year we have seen the strange spectacle of a Congress appropriating other millions to plow the cotton up. That's what you might call doubling your money. So much to put the cotton in and so much to take it out again.

It would seem that the particular transaction might have been branded "An Act to Provide for More Exercise for American Mules."

We all recall that the hardest thing we had to do was to train the mules to walk down the top of a row of cotton something he and his mulish ancestors had been whipped for doing since time was a youngster.

We have one section of the Government teaching cotton farmers how to raise more and more cotton per acre. Another section is teaching them how to curtail production and is paying them for it. Still another section—the Dam Department I suppose you would call it—is trying to bring in more land on which cotton can be planted.

We have seen the order go out to shoot young hogs. I suppose we shouldn't shoot 'em until we see the whites of their eyes.

In 1936 we have seen our government start out with all the money and organization needed to sharply curtail the crop. We had just finished raising something in excess of 12 million bales. The cotton crop was "sharply reduced" to nearly 19 million bales in 1939. That's reducing in reverse.

Today we find ourselves with some 11½ million bales of cotton in the so-called "loan." It is actually owned by the government for all practical purposes. That cotton is eating its head off in storage and is costing millions of dollars a year to carry. It is a load over the market.

Our exports of cotton are the lowest—save one year—in 60 years. We will not export this year 3½ million bales.

Cotton has been our greatest exportable surplus and in its export we have been able to greatly help all sections of the country.

In the meanwhile production of cotton in foreign countries has increased by leaps and bounds. Likewise the use of foreign cotton by other nations has greatly increased.

I have indulged in no personalities in all this as you will note. I don't doubt the honesty or sincerity of purpose of those responsible for putting King Cotton in the dog house. But I certainly have my doubts when it comes to their inability to resist the temptation to emulate Joseph's example.

About the only thing I see left to do is to make Deficits Legal Tender and put a tax on taxes.

Seriously speaking, the fact that cotton is in the dog house should be a matter of concern to all of us. We certainly need nation-wide co-operation and wise planning if we are to avoid mistakes in the future. To ask the question, "What shall we do now?" is like calling in the doctor to treat a cancer whereas eight or ten years ago the patient had a simple headache. As members of the American Cotton Shippers' Association we have vigorously opposed the agricultural program of the past ten years including the idea of the Farm Board. I assure you we gain no pleasure in being able to say "We told you so."

The American cotton farmer is entitled to a part of the tariff. He furnishes an exportable surplus which, at one time, was in world-wide demand. He must sell at world prices—that is certainly evident—and he must buy behind the tariff wall. Therefore it seems to me he should be given—following some formula which could be worked out—a part of the tariff—so to speak—in cash. If we are to export, let us say, 5 or 6 million bales of our crop, the cotton farmer ought to be paid a just amount of money on that part he exports.

Every facility calculated to enable the farmer to grow better cotton and cheaper cotton ought to be offered him.

It seems to me that some kind of credit control would help us solve part of the problem. By this I mean to throw out the thought that the farmer who keeps his production in line with possible consumption, who lives at home, taking care of his land, cutting his cost of production, should be enabled to have credit advanced to him in the form of production loans, by banks and otherwise whereas the farmer who does not follow correct procedure should not be granted such assistance.

By all means we should eliminate the government loan on cotton.

There are those who advocate an export subsidy. In my humble judgement such a plan would work much more havoc without helping anyone. Why we should wish to grant a subsidy to some foreign country of 2 cents or 4 cents or what have you is beyond me. If we must subsidize, let's subsidize the American cotton farmer as I have mentioned above, on the basis of his exports.

This enormous stock of cotton we now hold should be liquidated, gradually over a period of years by a non-political group of business men whose aim would be to get rid of a mistake in the least harmful manner.

And finally we ought to take the pledge to quit following in the footsteps of Joseph. It is high time we quit using nostrums. We can't go on making mistakes.

## Fundamentals of the New Textile Technology

(Continued from Page 16)

always a good thing to do? The thoughtless tester says: "Oh, yes! The book says so!" But let us consider the case of comparing a fabric as to strength before and after such a treatment as bleaching. Here we are not so much interested in the actual strength of the fabric as we are in how much stronger one sample is than another. If we select our samples prior to treatment, first so that the same warp yarns will be included in both, and second so that each test specimen includes the same set of warp yarns as every other, we largely eliminate the variation due to differences between warp yarns from different bobbins. That such differences actually exist does not have to be demonstrated to anyone who has ever tested ten or more specimens taken side by side from a fabric and noted how widely different their apparent strengths are. By using our brains and sampling with what we want to measure in mind we can be reasonably certain that distracting variations will be cared for. We can get a measure of the difference in strength due to the treatment without its being obscured or altered by other factors.

### Tensile Strength of Fabric Depends on Method of Test

It should be hardly necessary to point out that the tensile strength of the fabric depends upon how you measure it. If you use the grab method and pull a hole

in the body of the specimen you will get quite different results from those found by the ravelled strip method. In turn, if the strip specimen is prepared by some method other than ravelling and a number of such methods have been reported and investigated, each will yield its own set of values. Which set is right? Nobody knows. All we can do is test according to some accepted procedure and use the data comparatively. This is fairly well realized. What is not so apparent is that we have not measured the tensile strength of the fabric. We have only applied a tension to the piece. The failure takes place by a complex combination of slippage, twisting, compression and bending. It is further complicated by the fact that before a fabric can fail its component yarns must fail. Their failure in turn requires the failure of fibers to some extent as yet unknown. The failure of any one fiber involves the reorientation of certain molecular chains, the slippage of fibrils, and the opening up of submicroscopic faults. But there is no evidence that the cellulose of the cotton fiber fails or that the fibroin of the silk fiber or the keratin of the wool fiber breaks down and is destroyed in such a test. It may be altered, as in wool from the alpha to the beta form of keratin but not changed to some other substance or dissipated into thin air. A tensile test of the fabric is much more than simple rag pulling. It involves complex considerations of physical and organic chemistry, physics in the sense of thermodynamics, kinetics and optics. Until these are related and understood the simple

(Continued on Page 58)

MY JOB IS  
HELPING YOU



# SAVE MONEY

ON MAINTENANCE

My job is a mighty interesting one. I'm a field man for the National Lead Co., manufacturers of the famous Dutch Boy White-Lead. Every so often, I get invited by some well-known textile mill to look over the plant and the company houses. Purpose—to see if I can't cut down painting costs.

I don't make any recommendations until I've made a thorough check-up. Sometimes I run into painted surfaces that have cracked and scaled badly like the left-hand picture above. That means that the paint didn't have enough elasticity. It couldn't s-t-r-e-t-c-h. When the summer weather swelled up the wood, there was nothing for the paint to do but crack, and then scale off.

### Someone's out of luck

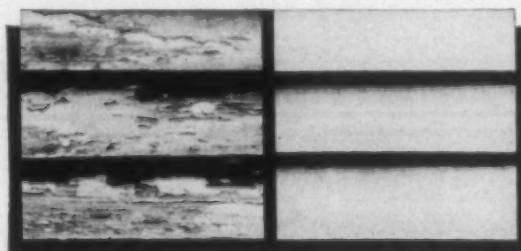
Cracking and scaling is bad news. The trouble is that all the bad paint doesn't scale off. Some of it sticks fast. So the whole surface has to be burned and scraped. That runs into money in a large area job. So does the extra coat—the new priming coat—you have to apply when you repaint.

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### Here's my proposition

Just say the word and I'll come and inspect all of your buildings. I'll work out a plan



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for repainting, listing which surfaces should be done this year and which ones can wait. The paint formulas I'll recommend will be especially suited to your requirements, taking into consideration the climate, type of surfaces to be protected, etc. This is possible because Dutch Boy is always mixed-to-order for every job. This service won't cost you one red cent. No obligation. Just write and say when it will be convenient for me to look over your property. I can be reached at the addresses below.



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## Address of President Rushworth at S. T. A. Meeting

(Continued from Page 14)

Contemporary history shows we have come a long way from the days of Magna Charta and the Constitution. We have seen how the pioneers of the textile industry co-operated with all factions to meet changing conditions and progress, but at all times advocating freedom. This is true of our industry today.

William Pitt said, "The wretch who, after having seen the consequences of a thousand errors, still continues to blunder, and whose age has only added obstinacy to stupidity, is surely the object of either abhorrence or contempt."

We must keep in close contact with present trends of legislation, the cotton subsidy and its effect on the domestic situation, and contemplated meeting of ten different cotton-producing countries this fall. The better informed the citizen, the better the community, for its advice and rights in legislation.

This is not a recommendation. However, with prevailing conditions, I would like to see our association co-operate with other organizations of this industry in a dignified, constructive program to insure the right of every person, from the highest executive to the humblest employee, *freedom to labor in his chosen field*.

In closing, I wish to express not only my own, but the gratitude of both active and associate members, to Marshall Dilling and David Clark, co-founders of this association, whose vision, ideals, and untiring efforts have given us the privilege of membership in an organization that has learned "*the first business of men on earth is the creation of human beings better than any previous type*," and whose ambition is *the most expert superintendents and overseers in the textile industry*.

## The Small Things That Count

(Continued from Page 20)

of grievances, either real or imaginary. I knew of a man who made a study of working conditions in a group of industrial plants other than textiles. He was especially interested in finding out how an organizer could come into a plant which had good working conditions and which was paying high wages and could organize the workers and even call them out on strike. He discovered that the organizer's technique was simple. First in casual conversation with individuals he stirred up talk of old grievances, later these grievances were discussed in mass meetings in order to fan resentment into flame. If grievances are smoldering in your organization, bring them to light and settle them. They are dangerous when suppressed.

Another small thing that counts is the giving of correct information. Rely on the loyalty of your workers by taking them into your confidence. Make them feel that your good and their good are one and the same. Lack of information and misinformation frequently confuse both workers and public. One strike, handled by the NRA Board, was called for higher wages when the workers heard that the mill company had paid a 60 per cent dividend to its stockholders. The workers felt that they were not receiving a fair share of the profits. As a matter of fact the company had paid no dividend for three years. If the workers had been informed reliably that business

had not justified a payment of dividends, not only the strike might have been averted but a better understanding between management and workers would have existed.

## Correct Information May Be Misleading

Even correct information may be misleading to the public. For instance, we see headlines in the papers to the effect that a certain company is paying \$100,000 to \$200,000 in dividends. If one reads down into the fine print, he will probably find that this sum represents a three per cent dividend on the investment. However, the casual reader has very little idea of the amount of money invested in the company; to him that \$100,000 to \$200,000 looks very big and he naturally assumes that the mill is making money hand over fist. The workers feel that they should receive higher wages. Therefore, my suggestion would be that when such information is given to the public press, that no statement be given as to the total dollars of the dividend, but that the dividend be expressed in per cent dividend, such as two, four or six per cent as the case may be.

Another seemingly small thing that counts greatly is knowing your people. Explain conditions in your plant to your people. It will develop loyalty in your workers. When I was a youngster my dad was overseer of the slasher room at Clifton. I remember how impressed he was that Mr. Converse, the president of the company, would stop off the mill a few minutes ahead of time, call the people together and discuss with them certain conditions. In my own experience I remember the treasurer coming through the mill at least once a week. As he passed through the plant he would nod smilingly to any worker whose eye he happened to catch; and as he had the opportunity, he would stop and pass a few words with a particular worker. He did many thoughtful things for the workers and when his name came up in a discussion, I have heard many workers explain, "Hot damn! Isn't he a fine fellow!" Knowing your people counts.

## Study of Jobs

As another small thing that counts, may I suggest that you study the various jobs in your plant always remembering that human relations and the job cannot be separated. Study each job with two questions in mind: (1) What constitutes a proper work load? and (2) Is the proper standard of machine efficiency being maintained? Usually a strike in a textile plant is attributed to stretch-out. Frequently this is not the case. In the final analysis it is more often due to poor running work. Every worker likes to have a few minutes spare time. If the work runs well, the help is in a much better frame of mind; good running work means satisfied help. So in studying these jobs, the work load, the worker and the machine efficiency should be considered jointly. No one can give a formula that will fit all cases. However, a base line for a given job can be established. Of course, there will be some variation from this base line depending upon conditions in the respective plants. However, such a base line which is fair to the mills and fair to the workers can be worked out. It will take time, effort, and patience but it will be worth it many times over.

Improvements in textile equipment and in organization have necessitated the reassignment of work on many jobs. However, some reassignments have been made without due study of the particular job. A case which was regis-



tered with the NRA Board illustrates the point. A superintendent had made certain changes in front roll speed on the slubber and had increased the speed of the front roll beyond that recommended by the engineer. This had been done by removing twist from the roving which meant that when an end came down on the slubber, the untwisted roving from the drafting rolls flew into the adjacent ends and broke down from eight to ten additional ends before the frame hand could stop the machine. This condition meant extra effort on the worker's part and lower production on the part of the mill. This poor running work caused these frame hands to become dissatisfied; they felt "stretched out." After looking into the complaint, the Board suggested to the management that the machine speeds be reduced to normal. After this was done, the same men got off greater production from the same machines with probably 80 per cent of their former effort. In this case, as in many others, the worker's apparent overload was due to lack of machine efficiency.

The work load is not a matter of the number of machines but it depends on the running of the work and the effort involved in handling the given number of units. To illustrate: In a given case a spinner on eight sides had 150 ends down per 1,000 spindles per hour. She complained of overload. The superintendent knew that in another mill on similar yard a spinner was running ten to twelve sides. However, he did not know that the spinner on the twelve sides was having only 35 ends down per 1,000 spindles per hour. Thus the spinner on eight sides, due to poor running work, was piecing up from two to three times more ends per hour than the spinner on twelve sides.

#### Importance of Proper Speeds

In studying your jobs, consider speeds especially in relation to machine efficiency. I know two mills which have recently reduced their spinning speeds from 10,000 to approximately 9,200. This change was made when analysis of the job showed that the higher speed was responsible for poor running work and was also consuming more supplies than necessary. Another mill using looms which were designed for 200 picks per minute, has found that under its conditions it can get greater production and fewer seconds with 175 picks per minute. Another NRA complaint came from two workers on drawing frames. When the job was inspected, it was found that even though the men were working at top speed, approximately 25 per cent of the drawing heads was standing idle. It was suggested to the management that machine speeds can be reduced. This was done. On later inspection the superintendent advised that he had cut the speed 20 per cent and would probably cut it an additional 10 per cent since he had found that the same two men on the same machines were now running the job with approximately 70 per cent of their former effort and at the same time getting off more production.

Study the factors that make the work load. Give a reasonable rest period. For instance, a doffer should have at least a 25 per cent rest period. Why? Because if he has a premium in the form of a rest period at the end of each doff, he will work at a very high rate in order to get this premium; consequently the frames will stand idle a much shorter period. If a doffer does not get a sufficient

(Continued on Page 61)



## TRUSTEES' SALE



Under the authority of the United States District Court  
for the Eastern District of Pennsylvania  
In the matter of the Meinig Hosiery Co., a Pennsylvania  
Corp., Debtor. Cause No. 20286

### REAL ESTATE—MACHINERY RAW MATERIAL—PATENTS AND TRADEMARKS OF

## The Meinig Hosiery Company

Manufacturers of Ladies' Full Fashioned Hose  
2047 KUTZTOWN ROAD  
READING, PENNA.

Also Desirable Industrial Property  
516 NORTH 12TH STREET, READING, PENNA.  
TO BE SOLD ON THE RESPECTIVE PREMISES  
MONDAY AND TUESDAY, JULY 17 AND 18, 1939

On Monday, July 17, 1939, at 10 A. M. D.S.T.  
AT 2047 KUTZTOWN ROAD  
(BEYOND ROCKLAND STREET)

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A tract of approximately 8.6 acres on which is erected a modern one- and two-story concrete and steel industrial building containing approximately 85,000 square feet. A splendid industrial building, advantageously located. Also tract of land 173 x 558 feet, irregular.

PATENTS & TRADE MARKS, COMMON STOCK: List may be examined at the office of the auctioneer.

#### MACHINERY AND EQUIPMENT AND RAW STOCK:

KNITTING MACHINES, 120 motor drive full fashioned Hilscher and Reading knitting machines, 80 LEGGERS, 40 FOOTERS, 18, 20 and 24 sections. All 42-gauge.

60 LEGGERS equipped with high-speed shock absorbers. Rocked adjustment, with Picot Worm Pointex, Ringless and Lace attachments. 40 UNION SPECIAL SEAMING MACHINES. Style 41200A and 41200AA and 41200.

30 SOTCO, CONTI RECORD AND HEPPORTH 24 POINT LOOPERS. American seaming and looping table, motor-driven extractors.

PROCTOR & SCHWARTZ 24- AND 30-FORM BOARDING MACHINES and Dryers.

SMITH DRUM, AMMON AND WEINERTH examining tables and forms.

WILDMAN AND SCOTT & WILLIAMS 6" CIRCULAR TOP KNITTERS. Leesona automatic winders, KIMBALL, MARKEM and POT-DEVER label printers, price marking, label pasting and cellophane cutting machines.

MACHINE SHOP EQUIPMENT: Motor drive 24" Steptoe shaper, Walcott lathe, Osterlein universal milling machine, motor geared cam milling machine, upright drill presses, portable electric drills, bench vises, small tools, etc., etc.

LARGE QUANTITY FULL FASHIONED KNITTING MACHINE REPLACEMENT AND REPAIR PARTS for Hilscher, Reading and Ludwig machines, consisting 19 new 3-carrier attachments, large quantity sinkers, dividers, jacks, jack guides, needles, points, knock over bits, picot and stretcher chain, buttons, snappers, carriers and large assortment finished and unfinished castings.

RAW MATERIAL: 6000 LBS. SILK AND WOOL, MERCERIZED AND COTTON KNITTING, LOOPING AND SEAMING THREADS.

MISCELLANEOUS FACTORY EQUIPMENT: Canvas bags and baskets, factory stools and chairs, pairing and examining tables, scales, bench vises, electric motors, office furniture, etc.

Open For Inspection

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Desirable three-story and basement, brick, concrete, steel and timber factory building. Lot 81½ feet by 124 feet. Floor area approximately 33,404 square feet. Well lighted, elevator service, sprinklered.

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## Fundamentals of the New Textile Technology

(Continued from Page 55)

tensile test of fabric is a real enigma.

What has been said about fabric in tension applies equally well to yarns and fibers. Shall you use the skein test, serigraph test, or single end test? Shall you test your fibers individually by the Chandler bundle method or the flat bundle method of Crowley and Bellinson? How long shall the specimen be? At what intervals shall it be taken? At what rate shall it be loaded? How shall it be gripped? And when you have your data how shall you try to relate the fiber strength to the strength of the yarn? This immediately raises the question of why a spun yarn has any strength at all.

### What Holds Yarn Together?

The fibers of which a yarn is composed are held together by twist. The twist simply acts to ensure an adequate number of points of contact between adjacent fibers and to produce a radial or normal pressure at these points. This pressure establishes a resistance to slipping which is due to friction and is equal to the normal pressure multiplied by the coefficient of friction. The coefficient of friction is a measure of the roughness of the fiber surface. Reduce the coefficient of friction or the normal pressure to zero and the yarn has no strength at all when gripped at a gage length longer than the maximum staple of the fiber. Obviously the coefficient of friction of fiber on fiber is important to the textile manufacturer. Obviously the magnitude of the normal pressure which can be exerted by one fiber against another is important. It is inconceivable that any other factors can be as important to him when he considers spun yarn strength. Of course, you would suppose such basic information as this is generally available, and the exact figure for coefficient of friction and normal fiber pressures should be at the tip of any textile manufacturer's tongue. I pause and ask anyone in the audience to name them. You can't. They are *not* known. And yet the manufacturer of stronger and better yarns depends on these two items of information. So far, for countless centuries, we have been stumbling along finding certain fortunate combinations by trial and error (a vastly more expensive method than any research program so far proposed—and I am not forgetting Mr. Calloway's recent suggestion). "Oh," you say, "We've gone along all right." But have you? Do you know that you can make on demand a tire cord of cotton which will be superior to some lucky discovery involving a fiber you never heard of before or which will be better than something which some research man is now evolving in the laboratory?

### Fundamental Research Needed

A vast amount of fundamental research is needed to furnish us with a knowledge of the ultimate constitution of our present fibers both natural and synthetic. A vast amount of fundamental research is needed to show us how these fibers can be most efficiently manufactured. A vast amount of fundamental research is needed to show us how to determine what the results of our manufacturing endeavors have evolved. The stock comment, of course, is that scientists still do not know what electricity

is but, nevertheless, make marvelous use of it. True. But the money they have spent to find out what it is has brought them nearer and nearer to their goal and has paid them handsome dividends in the way of research by-products. Any one of the large electrical companies spends more in a year on research than the entire textile industry has spent for that purpose in twenty-five. It is a sad criterion of progressiveness when we have to go to the Bell Telephone Laboratories for current information on moisture effect on textile fibers. This is a field of investigation which is relatively a side line with them, but their published results have made available information of importance to the textile industry and their efforts have resulted in the training of an A. C. Walker, now chairman of the United States Institute for Textile Research Dry Research Committee. A sign of progress is the readiness of the textile industry to recognize such a man and to use his talents.

### Study Fiber Structure

Fundamental research is increasingly turning to a study of fiber structure. These chains of molecules which I mentioned earlier seem to be arranged in fibers much as fibers are formed into yarns. For this reason, if for no other, such studies are important. A molecule is actually the smallest subdivision of a substance that still possesses the properties of the substance—that *still is the substance*. The microscope shows the broad outline of what makes up the fiber. It can be used to give indirect measurements of details of fiber structure too small to be seen directly. It can not show us a molecule, but it can show us the arrangement of chains of molecules. It does this by means of light waves which are bent and focused by the lens system. The light may be visible to the eye and colored as when the ordinary or the polarizing microscope is used, or it may be invisible as in the ultraviolet microscope. Here, while the image of the specimen can not be seen directly by the eye, it can be registered on a photographic plate.

Further, very much shorter wave-length light or energy may be used in the form of x-rays. These, too, can be bent or diffracted by the planes of atoms composing the molecular groups and can be registered on a photographic emulsion. If the atoms are regularly arranged in a regular arrangement of molecules—as in a fiber—the pattern produced on the film is characteristic of the chemical and physical composition of the substance. Thus there is a distinct and perfectly well recognized pattern for cellulose, for mercerized cellulose, for wool keratin or silk fibroin. Changes produced by chemical reaction or by physical manipulation produce measurable changes in this pattern and we have a really candid camera shot of the intimate details of fiber structure. Fortunately, such investigations can be conducted without destruction of the specimen, and the x-ray diffraction apparatus becomes an important tool for the research worker. It is practical enough to afford an easy means (and a relatively rapid one) for studying such related properties of cotton fiber as strength. Such work is now actively in progress in the laboratories of the Department of Agriculture by Dr. Berkeley under the direction of Dr. R. W. Webb. It is of such fundamental importance as to be printed in *Textile Research*—published by the United States Institute for Textile Research, Inc.



It is difficult for the layman to realize how very, very small the ultimate units of fiber structure really are. If, for example, you could sit down in front of a single cotton fiber one inch long and isolate and count the molecules of cellulose one by one you might do this at the rate of one per second eight hours a day, five days a week. If this were possible, you would be occupied with the task for some thirty million years. Even though they deal with the ultimate in smallness, the figures are astronomical in size. Fibers in the light of modern science constitute a fascinating field of study and the interpretation of the results of such work is of tremendous value to the textile manufacturer. As a start in this direction it is recommended that you read the book "Fundamentals of Fiber Structure" by Astbury, and the pamphlet "Textile Fibers in the Light of Modern Science" by the speaker. This latter booklet is published by the Textile Foundation of Washington, D. C., which sponsored the researches described therein, carried out in the laboratories of the University of Illinois, Cornell, and the Massachusetts Institute of Technology. The work continues and will be interpreted for the benefit of the industry as fast as new facts become available. Correlated work at the Boyce Thompson Institute for Plant Research, the National Bureau of Standards, the Department of Agriculture, and the Massachusetts Institute of Technology textile research laboratories continues.

On the basis of such endeavor as this, the rayon industry is growing with amazing rapidity. In the light of the information which has been found thus far and which will continue to be provided, the manufacturer of textiles of natural fibers will be able to progress. The handling of cotton fiber and the handling of wool have not yet been perfected. Even after all the centuries during which they have been with us the machinery used to process them can be improved. And here is to be found one of the strangest aspects of textile research—namely, the part which the archeologist can play in helping the textile machine builder, the spinner of yarns and the weaver of

fabrics. Many of the oldest fabric fragments which the archeologist has discovered are still unduplicated by machine. There appears, therefore, literally to be nothing new under the sun.

#### Nothing New Under the Sun

The insulation of dwelling houses with fibers of all sorts is considered more or less a recent development, but the fact remains that for centuries the Mongols have lived in felt-insulated yurts. It really is not too long a stretch of the imagination to bridge the gap between the felt-roofed cart of Tibet and the felt-insulated top of the latest model sedan. It is also true that the newest movie theater boasts a chenille floor carpet made in much the same way as the Peruvians constructed pile fabrics thousands of years ago. The ancient and sacred cotton cord of the Hindu holy man who lived long forgotten years before the Christian era and the coronation robes of the proudest monarch have very much in common in last analysis. The men who go down to the sea in ships with their nets and lines can vision a textile thread literally stretching back through the years to join them to their brother fishermen of the prehistoric Swiss lakes. It has been only after the passage of thousands and thousands of years that man has acquired the temerity to attempt the duplication of what nature has lavishly bestowed for uncounted centuries through the instrumentality of the sheep, the plant and the worm. So great has progress been as a result of developments in textile technology over recent years that the statement of a colleague of mine is to be taken as not only forceful but true. In discussing the progress of industrial physics, he says, "It will be only a matter of time before silk from the worm will be as obsolete as fuel oil from the whale."

In spite of this progress, however, much remains to be accomplished. Dr. Vannevar Bush, formerly vice-president of M. I. T. and now president of the Carnegie In-

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### May Spinning Shows Reduction

Washington, D. C.—The Census Bureau reported the cotton spinning industry operated during May at 81.4 per cent of capacity, on a two-shift, 80-hour-week basis, compared with 84.6 per cent during April this year, and 59.4 per cent during May last year.

Spinning spindles in place May 31 totaled 25,645,960, of which 21,975,222 were active at some time during the month, compared with 25,680,020 and 22,109,394 for April this year, and 26,520,732 and 21,341,750 for May last year.

Active spindle hours for May totaled 7,575,148,637 or an average of 295 hours per spindle in place, compared with 6,892,786,934 and 268 for April this year, and 5,449,312,478 and 205 for May last year.

Spinning spindles in place included: In cotton-growing States, 18,458,826, of which 16,591,650 were active, compared with 18,552,542 and 16,814,854 for April this year, and 18,607,688 and 16,026,524 for May last year; and in New England States, 6,388,696, of which 4,750,054 were active, compared with 6,336,240 and 4,696,338, and 6,911,972 and 4,740,210.

Active spindle hours included: In cotton-growing States, 6,071,128,075, or an average of 329 hours per spindle in place, compared with 5,463,987,147 and 295 for April this year, and 4,233,246,233 and 225 for May last year; and in New England States, 1,357,860,856, or an average of 213, compared with 1,293,585,569 and 204, and 1,101,091,853 and 159.

Active spindle hours and the average per spindle in place for May, by States, follow:

Alabama	580,970,604 and 319
Connecticut	108,544,591 and 210
Georgia	1,098,431,287 and 339
Maine	159,582,473 and 232
Massachusetts	729,796,484 and 202
Mississippi	44,510,937 and 223
New Hampshire	95,982,872 and 189
New York	58,808,500 and 170
North Carolina	1,802,725,074 and 304
Rhode Island	246,736,684 and 254
South Carolina	2,053,642,068 and 366
Tennessee	205,559,990 and 357
Texas	78,591,911 and 315
Virginia	169,404,720 and 265
All other States	141,896,442 and 191

### New Roller Bearing Spindle for Textile Use Announced

Cleveland.—A new, precision-built roller-bearing spindle, known as the Marquette Novibra, is being put on the market by the Marquette Metal Products Company, of this city. The new spindle is said to be perfectly balanced, and its high-speed roller-bearing movement reduces vibration to a minimum. It is designed to meet all demand from spinning and twisting operations.

The Novibra aids in eliminating the troublesome loss of balance in bobbins, especially wooden ones, by means of a special device for true seat location and what is described as a full-floating damping footstep bearing, which is said to allow the loaded spindle to center itself

at all times and speeds and thereby run in the center of the rotating mass.

Parts are easily assembled and lubrication is needed infrequently, it is said. No dust or dirt reaches the moving parts because roller bearings and bolsters are enclosed. Reversely, no oil or vapors reach the tapes, belts, bobbins or yarn. Speed of the new spindle is limited only by the speed of the machinery or the speed at which the yarn may be spun.

### County Seeks \$200,000 From Mill

Hendersonville, N. C.—Suit has been filed in the Henderson County Superior Court by the county of Henderson against Capt. Ellison A. Smyth, E. A. Smyth, III, and the Balfour Mill for the collection of approximately \$200,000 allegedly due the county for taxes on property not reported for taxation.

The county, through its attorney M. M. Redden, alleges that certain cash, notes, solvent credits and other personal property were not reported for taxes over a period of years.

### North American Rayon Prepares New Educational Chart

North American Rayon Corporation has prepared a new educational chart, showing not only the process of rayon making, but including samples of representative rayon fabrics.

The chart is primarily intended for the training directors of retail stores for uses with their classes and for colleges and schools. The information contained is comprehensive and printed in sufficiently large type as to be practical for educational work.

The steps in rayon yarn are pictured and a large diagram shows the actual spinning. A sample of finished yarn is included.

There are 20 fabrics shown, including circular knit underwear fabric, woven lingerie fabrics, printed and plain daytime dress fabrics, evening wear fabrics, velvet and drapery fabrics.

### Organization Of Small Mill Men Now a Reality

Mills of less than 20,000 spindles, manufacturing cotton textiles, have recently perfected the organization of an independent association to represent them in protesting provisions of the Fair Labor Standards Act.

W. J. Vereen, of Moultrie, Ga., who actively advocated such a move while talking with delegates at the American Cotton Manufacturers' Association convention, is one of the prime movers in the formation of this new association, which will make a strong effort to resist adoption of the recommended 32½ cent an hour minimum wage. Associated with Mr. Vereen in this movement is Paul Redmond, of Birmingham, head of Alabama Mills.

A temporary association has just been formed of executives of these smaller mills, to co-operate with the Association of Cotton Manufacturers of Georgia and with the American Cotton Manufacturers' Association in the pending minimum wage battle. The latter group, as noted, has had its counsel getting ready for the coming



hearings before the Fair Labor Standards administrator.

W. Gordon McKelvey, counsel for the Southern Garment Manufacturers' Association, is also counsel for the new association of executives of small mills, and he will represent them, with testimony, at the coming hearings. Mr. Vereen is chairman for the Georgia mills in this new association.

Texas mills, which are principally in the category of smaller mills, have their own association, which had testified in Washington before Industry Committee No. 1 when that body was in process of reaching its minimum wage recommendation.

An informal meeting of the cotton mill men of Georgia was held recently here to discuss ways and means of assisting the American Cotton Manufacturers' Association in preparing for the hearing in Atlanta June 26 at the Ansley Hotel. R. O. Arnold, president of the Cotton Manufacturers' Association of Georgia, presided, assisted by T. M. Forbes. Among those present were W. M. McLaurine, secretary and treasurer of the American Cotton Manufacturers' Association, and Tyre Taylor, counsel for the dissenting Southern mills.

In the discussion, it was developed that the report recommending a minimum wage rate of 32½ cents has far wider implications than its simplicity indicates.

A survey of the American Cotton Manufacturers' Association summarizing reports of about 60 per cent of the spindles in the South indicated that there would be a displacement of between 12,000 and 15,000 workers, and that when the survey is finally completed, there will be a possible displacement of between 25,000 and 30,000 people.

This displacement will be caused by the application of this wage rate if it is permitted to take effect, first, by the ability of certain mills to modernize their equipment; second, because many mills will not be able to operate and will have to close.

## The Small Things That Count

(Continued from Page 57)

rest period, naturally he will have to work at a slower rate, which will mean that the frame during doffing will stand idle a longer period which, in turn, reduces production and increases cost per pound.

Frequent checks on the cause of loom stoppage or end breakage are an important factor in job study. Explain to your workers that these checks are made in order to secure better running work. Do not leave with them the impression that they are assumed to be at fault. In general, if the loom stoppage is more than half to three-quarters stop per loom per hour, a high percentage of production cannot be expected. Therefore, when the stoppage is high, study should be made to determine the cause or causes of the particular stops. When these causes have been determined, necessary adjustments can be made. These checks on stoppage and breakage, made at regular intervals, will be of advantage both to the worker and to the management.

I have been emphasizing the small things which are sometimes forgotten in the stress of competition—tact in dealing with workers; patience in explaining situations; fairness and promptness in dealing with grievances; and a thoughtful study of the various plant jobs. These things, though small in themselves, make up the mighty and invaluable asset of good will between employee and employer.

In closing, I want to express my appreciation of you men who are running our great textile industry. You are doing a fine job under keen competition and in the face of adverse conditions. Had it not been for your courage and enterprise, the relief rolls of those drawing "rocking chair" money would be appreciably greater. You and other textile leaders deserve great credit for the service you are doing your state and nation in keeping the textile industry moving. So my word of encouragement is "stay with it." Conditions must eventually improve.

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THE KEEVER STARCH CO.

COLUMBUS, OHIO

## Fundamentals of the New Textile Technology

(Continued from Page 59)

stitution of Washington, has said, "I have always envied the duck. He can dive under water and come up dry. Yet his coat is pervious to air as it should be for his good health, and it fits beautifully. . . . It is certainly true that Solomon in all his glory was not arrayed like one of our modern women—not a queen, but a woman of the people. We have progressed. Yet the lily can still exhibit more pleasing finish and coloring, to my way of thinking; and the grass of the field presents me with more alluring gradations of greens and browns than I find in neckties. Moreover, the grass takes on more and more attractive hues after long exposure to the sun and rain, and neckties do not. This is not intended to be a criticism of the textile research worker, who, after all, has been studying his subject for only a short time, and who has produced some marvelous fibers and fabrics. Rather we should note that there is no field of human endeavor in which so much ingenuity and resourcefulness has been shown as in textiles, or which has brought more benefit to mankind."

Just as perfection of workmanship makes for strength and permanence in a machine or a building, so perfection of orientation of these long chains of molecules makes for strength and uniformity in fiber or filament in a textile material. The fiber technologist must join the chemist with his polymerizations and degradations, the physicist with his x-ray tubes and high-voltage atom splitters to aid the textile manufacturer better to realize some of the products of nature's fiber producers and also those which he himself squeezes through a spinneret.

### Manufacturing Operations Under Scrutiny

Manufacturing operations are of themselves under scrutiny and a critical survey of the correctness of the long-used principle of drafting is to the point. The cotton lap entering the carding machine as a sheet of matted fiber some forty-two inches wide by less than one-half an inch thick is drawn out in length more than thirty million times to form the usual yarn. It is a real problem to insure that in each successive cross section of this yarn there will be the same number of fibers as at every other cross section. At the moment this problem is insoluble. Science must lead the way to better yarn construction.

To say that the future of the textile industry rests in the hands of the atom splitter is not to speak in utter fantasy. There was a time when the ultimate was expressed by the man who spoke of "splitting hairs". The microscopist working in textiles nowadays literally splits hairs and much finer structures as a matter of course. It used to be a fact that a period of some three days was essential for the proper preparation and mounting of single cross sections of individual fibers or filaments. Now progress is such that this same task can be performed in something less than ten minutes and with definite assurance of success. As perfection of technique allows the technologist to continue along the path of decreasing magnitude working from fabric to yarn; from yarn to

fiber; from fiber to fibril; from fibril to long-chain molecule; from long-chain molecule to atom and so on ad infinitum, the technologist feels the urge as someone has put it "to unscrew the inscrutable." The textile technologist continually recognizes the fact that everything in accordance with modern physics and chemistry is in the last analysis a more or less complex association of forms of energy. It would be only logical to employ certain of these forms of energy which are now fairly well understood and fairly well controlled for the attack on the details of fiber structure. I use the word "attack" purposely as being descriptive of the work. The modern research worker in textiles literally bombards the atomic structure of the fiber with a hail of machine gun bullets in the form of x-rays. He lays down a barrage of heavier missiles from his mobile artillery consisting of ultra-violet lamps. He uses siege guns composed of polarizing microscopes and with them he batters down the last defences offered by the fibrils which really are the smallest unit of the fiber structure still visible definitely in the microscope. The chemist, too, sets to work sapping and mining to plant a high explosive here and there in the form of a swelling or disintegrating solution so that the fiber may be actually blown up. Strange as it seems, the microscopist is even now engaged in raining incendiary bombs on fibers by means of a hot stage used with the microscope so that he may study the charred ruins of the fiber and so determine the nature of the inorganic skeleton remaining.

The study is a fascinating one, for a simple cloth (if you will) composed of filaments of the ordinary fibers of everyday commerce is yet made up of materials each as strong for its cross section as a metal and yet producing a structure which is amazingly flexible and amazingly light. This flexibility, lightness and the accompanying strength make for the permanence of textile materials and makes them unique among the other materials which man uses. For uncounted generations mankind has adorned himself and his surroundings with more gorgeous and cleverly contrived tissues. And not only may the degree of civilization of nations past and present be measured by the kind of buildings which they erected, but by the nature and the excellence of their fabrics.

The ancients used their indigo, their Tyrian purple, their madder to produce colored fabrics which would not fade. A major problem still facing the textile industry is to produce more and better synthetic dyes which will be fast to use, to washing and to light. Why carbon, nitrogen, hydrogen and oxygen in one combination produce the indigo used to dye a silk fiber which is itself in turn produced by another arrangement of the same atoms is still to be discovered. All of us should be interested in a problem of this sort for in the last analysis we are really dressed in an impalpable powder combined with the essential elements of laughing gas, a whiff of the lightest gas we know, plus a fraction of the breath of life. Such are textiles. Such are some of the problems, new and old, of the textile technologist.



### New Flax Field

Yuma, Ariz.—In 1938 flax was first grown experimentally in this area. This year Yuma Valley farmers expect their crop to be worth \$180,000.

### Commodity Year Book

Commodity Research Bureau, Inc., announces publication of *Commodity Year Book—1939* (\$7.50). The book is the first of its kind—combining an all-inclusive statistical reference work, a raw material encyclopedia, and nine important fact-find studies on commodities in one volume. The special studies over such topics as governmental activities in commodities; relationship of stock prices to commodity prices; foreign exchange movements and commodity prices; war and commodity prices; U. S. balance of trade; international production control; and per capita consumption and population trends. In all, there are 624 pages and 120 chart illustrations. The book is well prepared, profusely illustrated, and of interest to users of silk. It contains 16 pages devoted to practical and useful data on raw silk, including New York prices of silk during the past 100 years, as reproduced in the May issue of *SOUTHERN KNITTER*.

### Woodruff Employees Hold Annual Supper

Woodruff.—The overseers, second hands, and section men of the Brandon Corporation enjoyed the annual fish supper at the old laundry building recently with 65 present.

C. P. Dill, superintendent of the mill, was master of ceremonies, and speakers were H. B. Kilgore, general manager of the mill; Rev. N. K. Polk, pastor of the Grace Methodist Church, and the Rev. H. L. Ferguson, pastor of the Northside Baptist Church, all of whom made informal humorous talks.

### Suit Filed Against Plant

Fayetteville, N. C.—Suit for \$3,013 against the Central Weaving and Spinning Company has been filed in the United States District Court here by James Miller, calling himself agent for 54 employees of the silk manufacturing concern.

The complaint alleges that from October, 1938, to February, 1939, the plaintiffs were paid \$1,506 less than the sum due them under provisions of the Fair Labor Standards Act, and asks for double compensation, plus attorney's fees.

The complainants state that the condition complained of was due to "a discriminatory system of piece rates" and that they were paid substantially less for the same work than other workers. They declare they were paid less than 25 cents an hour and that a number of them were worked more than 44 hours a week without being paid time and a half.

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(Continued from Page 18)

Broker: Right.

Attorney: One hundred bales of cotton, based on December, 80 points?

Broker: Yes.

Attorney: Now, you buy 100 bales of spot.

Broker: Right.

Attorney: You are going to hedge it.

Broker: That is right.

Attorney: Now, you can hedge it in December, but you have a right to hedge it in any month you want?

Broker: It is my cotton and I can do anything I want with it.

Attorney: And, instead of hedging it in December, you hedge it in May.

Broker: Right.

Attorney: Now, then, you are short May, are you not?

Broker: Yes.

Attorney: And you are long December?

Broker: I am not long anything, Mr. Attorney. I have a call based on December.

Attorney: What happens? Are you not interested in the fluctuation between December and May if you have cotton sold on December and you hedge it in May?

Broker: I am interested in the difference between the months, but I will not acknowledge I am long December.

Attorney: Then why are you interested in the differences, if you have no interest whatever based on December, Mr. Broker?

Broker: I did not say I was not interested in the differences. I said I would not acknowledge that I was long December.

Attorney: How can you be interested in the differences in anything unless you have an interest in those things?

Broker: Because the mill will fix the price on December, and I have an interest in May.

Attorney: Because, if December goes up and May does not go up in proportion, you have a gain, have you not?

Broker: Yes. If December goes down—

Attorney: And May does not go down in proportion you have a loss?

Broker: I have a loss; yes.

Attorney: Therefore, it is to your interest, to your pecuniary interest, for December to advance in a greater amount than May advances, is it not?

Broker: That will work to my advantage; yes.

Attorney: In other words, it would be a very pretty advantage if December went up and May went down?

Broker: Yes.

Attorney: If it widened out?



*Broker:* Yes.

*Attorney:* Now, your customer's interest, however, is for December to go down, is it not?

*Broker:* Not necessarily, Mr. Attorney. He is only interested in the price. It might be possible that that price would go down regardless of whether December went down or up.

*Attorney:* He is only interested in the month of December, is he not?

*Broker:* He is only interested in the price at which he takes his cotton.

*Attorney:* That is right. If he has bought it when December sells at 12 cents, and December declines to 11 cents, he gets his cotton 1 cent a pound cheaper, does he not?

*Broker:* That is right, if he fixes the price at the bottom.

*Attorney:* But you would have a loss of 1 cent a pound on that sale unless the month in which you hedged showed a corresponding movement, would you not?

*Broker:* That is correct.

*Attorney:* I am just trying to show there, Mr. Broker, that your interest in December is exactly the reverse of your customer's interest in December. He gets his cotton cheaper if it goes down, and you either make a gain or a loss, depending upon the differences between those months of December and May?

*Broker:* I do not like the way you word it. Will you please express it again for me?

(The reporter read the question as above recorded.)

*Broker:* I do not like that, that we are the exact reverse of our customer's interest in December.

*Attorney:* Why is it not reversed?

*Broker:* Because the whole market can go down.

*Attorney:* Yes; but I am talking about December. Let us say that the month of May remains stationary. Now, if that month remains stationary while December goes down, you have got a loss, have you not?

*Broker:* That is correct.

*Attorney:* The customer has got a gain?

*Broker:* That is correct.

*Attorney:* Now, let December go up; you have a gain and your customer has a loss?

*Broker:* That is correct.

*Attorney:* Is not that the reverse?

*Broker:* Yes; that is right.

*Attorney:* Now, what puts the market up, buying or selling?

*Broker:* Economic conditions put the market up.

*Attorney:* Does not buying pressure put the market up and selling pressure put it down, no matter what the buying or selling is attributed to? The buying pressure puts the market up?

*Broker:* Temporarily it might do so, but it does not

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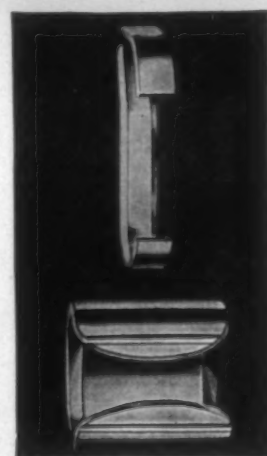
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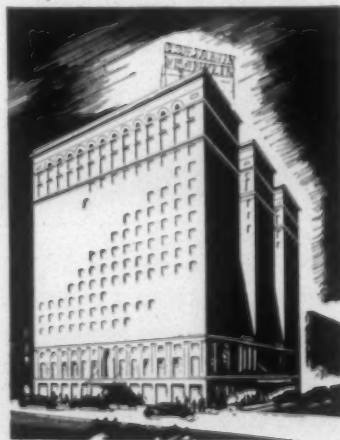
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always mean that it is going to go up because there is a little buying.

*Attorney:* If there is sufficient buying it will go up?

*Broker:* How do you know it will continue to have that effect?

*Attorney:* If, after you have sold this cotton based on December and have hedged it in May, what would you think of the practice of going in and putting in a straddle for your own account between those months, by buying December and selling some more May? Do you think that is all right?

*Broker:* It is perfectly all right if a man wants to take that risk.

*Attorney:* Now, you have sold your customers, and we will say that you have sold 100,000 bales of cotton, based on December.

*Broker:* All right.

*Attorney:* And you have hedged all this cotton, which you have acquired, in May. Now, in effect, you have a straddle between those two months?

*Broker:* I cannot imagine anybody who would want to do that under Southern delivery.

*Attorney:* I say, you can do it?

*Broker:* It would not be very profitable, I am afraid.

*Attorney:* I am directing my question now as to whether you think it is proper business practice for a merchant to sell on call and place a hedge on the cotton in another month, in another month than that on which the call is based, then to go into the market and put in additional straddles?

*Broker:* I see no reason why he should not, if he wants to take that extra risk.

*Attorney:* In other words, you think the merchant is the sole criterion of what risks should be taken, regardless of whether that risk may operate to the disadvantage of the people with whom he is dealing?

*Broker:* How do you know it is going to operate to the disadvantage of the people with whom he is dealing?

*Attorney:* It certainly could not help him, could it?

*Broker:* I have seen it do it. I have seen a person get on a straddle and get in a hot spot and liquidate. It destroys the difference.

*Attorney:* Your complaint there would be that you cannot play a sure thing?

*Broker:* There is nothing sure about cotton that I know of.

*Attorney:* But there are certain things that can be done with less risk when you have control of the situation?

*Attorney:* The more bidders you have, the better prices you get; is that not right?

*Broker:* That is right.

*Attorney:* And if you have about 35 to 40 per cent of your cotton handled by three firms or four, you have it pretty well concentrated, have you not?



*Broker:* Well, the figures speak for themselves.

*Attorney:* If 15 interests handle 70 per cent of the cotton today . . .

*Broker:* (interposing) What is that?

*Attorney:* If 15 interests are handling 70 per cent of the cotton today, that means that the farmer only has about 15 bidders?

*Broker:* You mean to say only 15 people in the spot business are handling 70 per cent of the cotton?

*Attorney:* That is right.

*Broker:* I would not know the figure, Mr. Attorney.

*Attorney:* Do you think that condition is helpful? Say 15 to 20, if you want; make it 20.

*Broker:* After all, the people that are handling the cotton that you mentioned are only distributors, and are not the final buyers.

*Attorney:* In other words, the middleman does not serve any purpose at all except as a kind of handler of cotton?

*Broker:* A distributor, and he is the most efficient distributor that you could have.

*Attorney:* He is not interested in a differential or profit in that distribution, is he?

*Broker:* He is not in business for love, of course.

*Attorney:* He is doing a kind of eleemosynary operation?

*Attorney:* Do you think you could liquidate 1,000,000 bales of cotton without a loss of more than \$5 a bale, Mr. Broker?

*Broker:* I know I could not, but I do not know of anybody who would carry 1,000,000 bales of cotton, outside of the Government.

*Attorney:* I am afraid you do not know very much about your exchange.

*Broker:* I still hope to live a little longer. Maybe I will learn.

*Attorney:* The Japanese, you say, usually buy their cotton along in the summer or the early part of the summer, June. Now, is there any reason why the American consumer or spinner should buy his cotton at the time cotton is coming in, and the Japanese, who use from 10 to 15 per cent of our crop or more, buy in the late spring or early summer? What is the reason for that?

*Broker:* There is no reason. It is a matter of common gossip that the foreign spinners every year beat the American spinners by getting the cotton at a better price than the American spinners, the reason being that the American spinners are so close to the woods, they are so close to the supply, that they can not see the trees.

*Attorney:* There has been testimony here to the effect that the price at which the carryover can be bought—in other words, whoever carries the surplus stock over from one year to another, fixes the price on the new crop.

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**EATON, PAUL B.**, 213 Johnston Bldg., Charlotte, N. C.

**EMMONS LOOM HARNESS CO.**, Lawrence, Mass. Sou. Plant 118½ W. Fourth St., Charlotte, N. C. George Field, Mgr.; Geo. F. Bahan, District Rep.

**ENGINEERING SALES CO.**, 217 Builders' Bldg., Charlotte, N. C., S. R. and V. G. Brookshire.

**FIDELITY MACHINE CO.**, 3908-18 Frankford Ave., Philadelphia, Pa. Sou. Reps., John E. Fox, First National Bank Bldg., Charlotte, N. C.; R. C. Aycock, 911 Provident Bldg., Chattanooga, Tenn.

**FOSTER MACHINE CO.**, Westfield, Mass. Sou. Office, 1314 Johnston Bldg., Charlotte, N. C.

**FRANKLIN MACHINE CO.**, 44 Cross St., Providence, R. I.

**FRANKLIN PROCESS CO.**, Providence, R. I. Sou. Plants, Southern Franklin Process Co., Greenville, S. C.; Central Franklin Process Co., Chattanooga, Tenn.

**GENERAL COAL CO.**, 1215 Johnston Bldg., Charlotte, N. C. C. L. Rowe, Sou. Sales Mgr. Reps., J. W. Lassiter, F. W. Reagan, E. H. Chapman, Charlotte, N. C.; J. C. Borden, Grace American Bldg., Richmond, Va.; D. H. R. Wigg, Walnwright Bldg., Norfolk, Va.; W. A. Counts, Law & Commerce Bldg., Bluefield, W. Va.; H. C. Moshell, Peoples Bank Bldg., Charleston, S. C.; P. W. Black, Greenville, S. C.; H. G. Thompson, Bristol, Tenn.

**GENERAL DYESTUFF CORP.**, 435 Hudson St., New York City. Sou. Office and Warehouse, 1101 S. Blvd., Charlotte, N. C. B. A. Stigen, Mgr.

**GENERAL ELECTRIC CO.**, Schenectady, N. Y. Sou. Sales Offices and Warehouses, Atlanta, Ga., E. H. Ginn, Dist. Mgr.; Charleston, W. Va., W. L. Alston, Mgr.; Charlotte, N. C., E. P. Coles, Mgr.; Dallas, Tex., L. T. Blaisdell, Dist. Mgr.; Houston, Tex., E. M. Wise, W. O'Hara, Mgrs.; Oklahoma City, Okla., F. D. Hathway, B. F. Dunlap, Mgrs. Sou. Sales Offices, Birmingham, Ala., R. T. Brooke, Mgr.; Chattanooga, Tenn., W. O. McKinney, Mgr.; Ft. Worth, Tex., A. H. Keen, Mgr.; Knoxville, Tenn., A. B. Cox, Mgr.; Louisville, Ky., E. B. Myrick, Mgr.



Memphis, Tenn., G. O. McFarlane, Mgr.; Nashville, Tenn., J. H. Barksdale, Mgr.; New Orleans, La., B. Willard, Mgr.; Richmond, Va., J. W. Hicklin, Mgr.; San Antonio, Tex., I. A. Uhr, Mgr.; Sou. Service Shops, Atlanta, Ga., W. J. Selbert, Mgr.; Dallas, Tex., W. F. Kaston, Mgr.; Houston Tex., F. C. Bunker, Mgr.

**GENERAL ELECTRIC VAPOR LAMP CO.**, Hoboken, N. J. Sou. Reps., Frank E. Keener, 187 Spring St., N. W., Atlanta, Ga.; C. N. Knapp, Commercial Bank Bldg., Charlotte, N. C.

**GILL LEATHER CO.**, Salem, Mass. Sou. Reps., Gastonia, N. C., W. G. Hammer; Greenville, S. C., W. J. Moore, Ralph Gossett; Griffin, Ga., Belton C. Plowden.

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**GULF OIL CORPORATION OF PA.**, Successor to **GULF REFINING CO.**, Pittsburgh, Pa. Division Sales Offices: Atlanta, Ga.—A. M. Wright, Greenville, S. C.; T. C. Scaffie, Spartanburg, S. C.; J. H. Hooten, Gastonia, N. C.; R. G. Burkhalter, Charlotte, N. C.; G. P. King, Jr., Augusta, Ga.; Boston, Mass.; New York, N. Y.; Philadelphia, Pa.; New Orleans, La.; Houston, Tex.; Louisville, Ky.; Toledo, O.

**HART PRODUCTS CORP.**, 1440 Broadway, New York City. Sou. Mgr., Charles C. Clark, Box 274, Spartanburg, S. C. Sales Reps., Tally W. Piper, Box 534, Fairfax, Ala.

**H & B AMERICAN MACHINE CO.**, Pawtucket, R. I. Sou. Offices, 815 The Citizens and Southern National Bank Bldg., Atlanta, Ga.; J. C. Martin, Agt.; Johnston Bldg., Charlotte, N. C.; Elmer J. McVey, Mgr.; Frita Sweifel, Fred Dickinson, Jim Miller, sales and service representatives.

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**HOLBROOK RAWHIDE CO.**, Providence, R. I. Sou. Distributors, Odell Mill Supply Co., Greensboro, N. C.; Textile Mill Supply Co., and Charlotte Supply Co., Charlotte, N. C.; Gastonia Mill Supply Co., Gastonia, N. C.; Sullivan Hdw. Co., Anderson, S. C.; Montgomery & Crawford, Spartanburg, S. C.; Carolina Supply Co., Greenville, S. C.; Fulton Supply Co., Atlanta, Ga.; Southern Belting Co., Atlanta, Ga.; Greenville Textile Mill Supply Co., Greenville, S. C.; and Atlanta, Ga.; Young & Vann Supply Co., Birmingham, Ala.; Waters-Garland Co., Louisville, Ky.

**HOLLISTER, E. W.**, Box 721, Spartanburg, S. C. Distributor in N. C. and S. C. for The Merrow Machine Co. and American Safety Table Co. Merrow parts and supplies stocked at Spartanburg.

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**HOUGH SHADE CORP.**, Janesville, Wis. Sou. Reps., James B. Barton, Jr., 223 Mortgage Guarantee Bldg., Atlanta, Ga.; F. H. Hughes, P. O. Box 454, Greenville, S. C.

**HOUGHTON WOOL CO.**, 253 Summer St., Phone Liberty 1875, Boston, Mass. Sou. Rep., Jas. E. Taylor, P. O. Box 2084, Phone 3-3692, Charlotte, N. C.

**HOWARD BROS. MFG. CO.**, Worcester, Mass. Sou. Office and Plant, 244 Forsyth St., S. W., Atlanta, Ga., Guy L. Melchor, Sou. Agent; S. W. Rep., Russell A. Singleton Co., Inc., Mail Route 5, Dallas, Tex.; J. Floyd Childs, 244 Forsyth St., S. W., Atlanta, Ga.; Carl M. Moore, 333 York St., Gastonia, N. C.

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**JACKSON LUMBER CO.**, Lockhart, Ala.

**KENNEDY CO.**, W. A., 814 S. Tryon St., Charlotte, N. C. W. A. Kennedy, Pres.

**KEEVER STARCH CO.**, Columbus, O. Sou. Office, 1200 Woodside Bldg., Greenville, S. C.; Daniel H. Wallace, Sou. Agt. Sou. Warehouses, Greenville, S. C.; Charlotte, N. C. Sou. Reps., Claude B. Iler, P. O. Box 1383, Greenville, S. C.; Luke J. Castile, 924 Monticello Terrace, Charlotte, N. C.; F. M. Wallace, Homewood, Birmingham, Ala.

**LAUREL SOAP MFG. CO., Inc.**, 2607 E. Toga St., Philadelphia, Pa. Sou. Reps., A. Henry Gaede, P. O. Box 1083, Charlotte, N. C., and W. R. Sargent, P. O. Box 1044, Greenville, S. C.

**THE MERROW MACHINE CO.**, 8 Laurel St., Hartford, Conn. E. W. Hollister, P. O. Box 721, Spartanburg, S. C.; R. B. Moreland, P. O. Box 895, Atlanta, Ga.

**MOCCASIN BUSHING CO.**, Chattanooga, Tenn. Sou. Jobbers: Odell Mill Supply Co., Greensboro, N. C.; Shelby Supply Co., Shelby, N. C.; Greenville Textile Supply Co., Greenville, S. C.; M. C. Thurston Co., Richmond, Va.; Ferebee-Johnson Co., Lynchburg, Va.; Knoxville Belting Co., Knoxville, Tenn.; Miss Foundry & Mch. Co., Jackson, Miss.; Corinth Machine Co., Corinth, Miss.; Industrial Supplies Co., LaGrange, Ga.; Philips Hdw. & Supply Co., Columbus, Ga.; Macon Supply Co., Macon, Ga.; Owen-Richards Co., Birmingham, Ala.; Matthews-Moroso Sales Co., 909 S. Mint St., Charlotte, N. C.

**MORELAND CHEMICAL CO., Inc.**, Spartanburg, S. C. Gen. Mgr., Paul C. Thomas. Sou. Reps., Jos. P. Carter, E. H. Thomas, Mgr. Chemical Div., T. J. Boyd.

**NATIONAL ANILINE & CHEMICAL CO., Inc.**, General Office, 40 Rector St., New York City. Julian T. Chase, Res. Mgr., 201 W. First St., Charlotte, N. C.; Kenneth Mackenzie, Asst. to Res. Mgr., 201 W. First St., Charlotte, N. C.; Salesmen: D. S. Moss, 201 W. First St., Charlotte, N. C.; W. L. Barker, 201 W. First St., Charlotte, N. C.; R. B. Murdoch, 201 W. First St., Charlotte, N. C.; Harry L. Shinn, 201 W. First St., Charlotte, N. C.; A. R. Okerstrom, 201 West First St., Charlotte, N. C.; J. H. Shuford, Jefferson-Standard Bldg., Greensboro, N. C.; J. A. Parker, Jefferson-Standard Bldg., Greensboro, N. C.; H. A. Rodgers, 1006 James Bldg., Chattanooga, Tenn.; C. A. Spratt, 1006 James Bldg., Chattanooga, Tenn.; J. I. White, American Savings Bank Bldg., Atlanta, Ga.; W. H. Jackson, B-3 Dimon Court Apt., Columbus, Ga.; Frank L. Feagle, 3300 St. Charles Ave., Apt. No. 4, New Orleans, La.; E. L. Pemberton, 324 Dick St., Fayetteville, N. C.

**NATIONAL LEAD CO.**, Main Office, 111 Broadway, New York. Branches: 659 Freeman Ave., Cincinnati, O.; Widener Bldg., Philadelphia, Pa. (John T. Lewis & Bros. Co.); 111 Broadway, New York. (Atlantic Branch, Georgia Lead Div., Atlanta, Ga. Warehouses: Savannah Bonded Warehouse & Transfer Co., Bay St. Extension and Canal St., Savannah, Ga.; John T. Lewis & Bros. Co., Pier 1, S. E. Corner Light and Pratt Sts., Baltimore, Md.; F. V. Gunn & Co., 1422 East Cary St., Richmond, Va. Sou. Sales Reps.: A. K. Brown, 1670 Cornell Road, N. E., Atlanta, Ga.; J. K. Campbell, Cor. Jacksboro Pike and Oak Park Drive, Fountain City, Tenn.; Angus P. Gunn, 4011 Mt. Vernon St., Richmond, Va.; R. S. Hayes, 2305 Fourth Ave., Richmond, Va.; C. Wallace Jackson, 1709 Fort Bragg Road, Fayetteville, N. C.; T. B. Longhurst, 301 S. Union St., Concord, N. C.

**NATIONAL RING TRAVELER CO.**, 257 W. Exchange St., Providence, R. I. Sou. Office and Warehouse, 131 W. First St., Charlotte, N. C. Sou. Agt., L. E. Taylor, Charlotte, N. C. Sou. Reps., Otto Pratt, Union Mills, N. C.; H. B. Askwew, Box 272, Atlanta, Ga.; Wm. S. Johnstone, P. O. Box 993, Gastonia, N. C.

**NEW ENGLAND BOBBIN & SHUTTLE CO.**, Nashua, N. H.

**N. Y. & N. J. LUBRICANT CO.**, 292 Madison Ave., New York City. Sou. Office, 1000 W. Morehead St., Phone 3-7191, Charlotte, N. C., Spartanburg, S. C., Atlanta, Ga., Greenville, S. C. Falls L. Thomason, Sou. Dist. Mgr.

**NORLANDER MACHINE CO.**, New Bedford, Mass. Sou. Plant, 213 W. Long St., Gastonia, N. C.

**NORMA-HOFFMANN BEARINGS CORP.**, Stamford, Conn. Sou. Rep., E. W. Lawrence, 1841 Plaza, Charlotte, N. C.

**ONYX OIL & CHEMICAL CO.**, Jersey City, N. J. Sou. Rep., Edwin W. Klumpp, 2018 Dilworth Court, West, Charlotte, N. C.; Cliff C. Myers, 2131 Charlotte Drive, Charlotte, N. C.

**PABST SALES CO.**, 221 N. LaSalle St., Chicago, Ill. Sou. Rep., W. A. Pardue, Anderson, S. C. Sou. Warehouse: Textile Warehouse Co., Greenville, S. C.

**PARKS-CRAMER CO.**, Plants at Fitchburg, Mass., and Charlotte, N. C. Atlanta Office, Bona Allen Bldg.

**PENICK & FORD, LTD., Inc.**, 420 Lexington Ave., New York City; Cedar Rapids, Iowa; P. G. Wear, Sou. Sales Mgr., Atlanta, Ga.; W. J. Kirby, E. C. Kontz, J. H. Almand, Atlanta Office; C. T. Lassiter, Greensboro, N. C.; G. L. Morrison, Spartanburg, S. C.; T. L. Nelson, Charlotte, N. C.; W. R. Brown, Dallas, Tex. Stocks carried at convenient points.

**PERKINS & SON, Inc.**, B. F., Holyoke, Mass.

**PITTSBURGH PLATE GLASS CO.**, Pittsburgh, Pa. Sou. Offices and Warehouses: Baltimore, Md.; Birmingham, Ala.; Charlotte, N. C.; Dallas, Tex.; El Paso, Tex.; Fort Worth, Tex.; High Point, N. C.; Houston, Tex.; Knoxville, Tenn.; Memphis, Tenn.; Nashville, Tenn.; New Orleans, La.; Richmond, Va.; Savannah, Ga.

**PROVIDENT LIFE & ACCIDENT INS. CO.** (Group Accident and Health, and Welfare Plans Div.), Chattanooga, Tenn. Southeastern Div. Office, 203 Commercial Bldg., Gastonia, N. C.

**THE PURE OIL CO.**, Industrial Sales Dept., Southeastern Division Office, 140 Spring St., S. W., Atlanta, Ga., O. T. Clark, Mgr.

**RHOADS, J. E. & SONS**, 35 N. Sixth St., Philadelphia, Pa. Sou. Reps., L. H. Schwoebel, 513 N. Spring St., Winston-Salem, N. C.; J. W. Mitchell, Box 1589, Greenville, S. C.; A. S. Jay, 1600 S. 21st St., Birmingham, Ala.; J. T. Hoffman, 88 Forsyth St., S. W., Atlanta, Ga.; Atlanta Store, C. R. Mitchell, Mgr., 88 Forsyth St., S. W., Phone Walnut 5915, Atlanta, Ga.

**RHODE ISLAND TOOL CO.**, Providence, R. I. Sou. Rep., Henry Anner, Box 1515, Greenville, S. C.

**ROY & SONS, B. S.**, Worcester, Mass. Sou. Office, Greenville, S. C., John R. Roy, Representative.

**SACO-LOWELL SHOPS**, 60 Batterymarch St., Boston, Mass. Sou. Office and Supply Depot, Charlotte, N. C., Walter W. Gayle, Sou. Agent; Atlanta, Ga., John L. Graves and Miles A. Comer, Selling Agents; Greenville, S. C., H. P. Worth, Selling Agent.

**SEYDEL CHEMICAL CO.**, Jersey City, N. J. Sou. Rep., Harold P. Goller, Greenville, S. C.; Alexander W. Anderson, 10 Milton Ave., Edgewood, R. I.

**SEYDEL-WOOLLEY & CO.**, 748 Rice St., N. W., Atlanta, Ga.

**SHERWIN-WILLIAMS CO., THE**, Cleveland, O. Sou. Warehouses: Richmond, Va., 1017-19 Main St.; Charlotte, N. C., 222 W. First St.; Spartanburg, S. C., 158 E. Main St.; Columbia, S. C., 1713 Main St.; Atlanta, Ga., 70 Broad St., N. W.; Columbus, Ga., 1038 Broadway; Nashville, Tenn., 711 Church St.; Chattanooga, Tenn., 826-28 Broad St.; Birmingham, Ala., 2016 Third Ave., N.; Montgomery, Ala., 33 Commerce St.; Knoxville, Tenn., 314 S. Gay St. Sou. Reps., E. H. Steger, 222 W. 1st St., Charlotte, N. C.; R. B. Olney, 158 E. Main St., Spartanburg, S. C.; W. Masten, 1300 W. 4th St., Winston-Salem, N. C.; T. R. Moore, 501 Westover Ave., Roanoke, Va.; G. N. Jones, 207 Glascock St., Raleigh, N. C.; W. H. Mastbrook, 4207 Oakland Ave., Greensboro, N. C.; John Limbach, 70 Broad St., N. W., Atlanta, Ga.; D. S. Shimp, 3 Columbus Sta., Nashville, Tenn.; O. A. King, 4001 Hanover Ave., Richmond, Va.; M. P. Forter, 1038 Broadway, Columbus, Ga.

**SLAYSMAN CO., THE**, 813 E. Pratt St., Baltimore, Md.

**SNAP-ON TOOLS CORP.**, Kenosha, Wis. 623 Spring St., N. W., Atlanta, Ga.; 20 E. 21st St., Baltimore, Md.; 2809 Main St., Dallas, Tex.; 119 W. Ashley St., Jacksonville, Fla.; 2516 Grand Ave., Kansas City, Mo.; 940 Poydras St., New Orleans, La.; 1645 W. Broad St., Richmond, Va.; 2647 Washington Blvd., St. Louis, Mo.

**SOCONY-VACUUM OIL CO., Inc.**, Southeastern Div. Office, 1602 Baltimore Trust Bldg., Baltimore, Md. Warehouses: Union Storage Warehouse Co., 1000 W. Morehead St., Charlotte, N. C.; Textile Warehouse Co., 511 Rhett St., Greenville, S. C.; South Atlantic Bonded Warehouse Co., Greensboro, N. C.; New South Express Lines, Columbia, S. C.; Terminal Storage Corp., 317 N. 17th St., Richmond, Va.; Taylor Transfer Co., 102 Boush St., Norfolk, Va.

**SOLVAY SALES CORP.**, 40 Rector St., New York City. Sou. Branches: 212 S. Tryon St., Charlotte, N. C.; H. O. Pierce, Mgr.; Earl H. Walker, Earl K. Arthurs and Hugh Causey, salesmen, American Bank Bldg., New Orleans, La.; C. O. Kingsbury, Mgr.; W. L. Moise, salesman. Sou. Plant, Solvay Process Co., Baton Rouge, La.

**SONOCO PRODUCTS CO.**, Hartsville, S. C.

**SOUTHERN SPINDLE & FLYER CO.**, Charlotte, N. C.

**STALEY MFG. CO., A. E.**, Decatur, Ill. Sou. Offices, 1710 Rhodes-Haverty Bldg., Atlanta, Ga., Wm. H. Randolph, Jr., Sou. Mgr.; L. A. Dillon, Asst. Sou. Mgr.; 812 Montgomery Bldg., Spartanburg, S. C.; Geo. A. Dean, Reps., W. T. O'Steen, Greenville, S. C.; H. F. Taylor, Jr., Monroe, N. C.; John T. Higginbotham; H. A. Mitchell, Birmingham, Ala.

**STANDARD-COOSA-THATCHER CO.**, Chattanooga, Tenn. Sales and Executive Offices, Lafayette Bldg., Philadelphia, Pa. Sou. Reps., W. S. Lawson, care Standard-Coosa-Thatcher Co., Chattanooga, Tenn.; J. P. Rickman, care Standard-Coosa-Thatcher Co., Chattanooga, Tenn.; N. P. Murphy, Guilford Bldg., Greensboro, N. C.

**STEEL HEDDLE MFG. CO.**—Main Office and Plant, 2100 W. Allegheny Ave., Philadelphia, Pa. Greensboro Office, Guilford Bank Bldg., Greensboro, N. C.—C. W. Cain, Greenville Office and Plant, Greenville, S. C.—J. J. Kaufmann, Jr., Asst. Vice-Pres. and Mgr. of Southern Divisions; Davis L. Batson; Sam Zimmerman, Jr.; Henry Goodwin, Atlanta Office and Plant, Box 1496, Atlanta, Ga.—H. Ralford Gaffney, Barney Cole, Vernon A. Graft, Spinning and Twister Ring Division, Ralph Ragan, Southern Shuttles, Inc., Greenville, S. C. (subsidiary), Louis P. Batson, Pres.

**STEIN, HALL & CO., Inc.**, 285 Madison Ave., New York City. Sou. Office, Johnston Bldg., Charlotte, N. C., Ira L. Griffin, Mgr.

**STERLING RING TRAVELER CO.**, 101 Lindsey St., Fall River, Mass. Sou. Rep., Geo. W. Walker, P. O. Box 1894, Greenville, S. C.; D. J. Quillen, P. O. Box 443, Spartanburg, S. C.

**TERRELL MACHINE CO.**, Charlotte, N. C. E. A. Terrell, Pres. and Mgr.

**TEXAS CO., THE**, New York, N. Y. District Offices, Box 901, Norfolk, Va., and Box 1722, Atlanta, Ga. Bulk plants and warehouses in all principal cities. Lubrication Engineers, H. L. Marlow, W. H. Grose, W. P. Warner, Greensboro, N. C.; W. H. Goebel, Roanoke, Va.; A. H. Bamman, Norfolk, Va.; P. H. Baker, Spartanburg, S. C.; D. L. Keys, Richmond, Va.

**TEXTILE-FINISHING MACHINERY CO.**, Providence, R. I. Sou. Office, Johnston Bldg., Charlotte, N. C.

**TEXTILE SHOP, THE**, Franklin St., Spartanburg, S. C. E. J. Eaddy, Sec. and Treas.

**TIDEWATER ASSOCIATED OIL CO.**, 17 Battery Place, New York City. Carolina Distributor: Heath Distributing Co., 1118 S. Blvd., Charlotte, N. C.

**UNIVERSAL WINDING CO.**, Providence, R. I. Sou. Offices, Charlotte, N. C., Atlanta, Ga.

**U. S. BOBBIN & SHUTTLE CO.**, Lawrence, Mass. Sou. Plants, Greenville, S. C.; Johnson City, Tenn., and Monticello, Ga. Sou. Reps., E. Rowell Holt, J. M. Gregg, 208 Johnston Bldg., Charlotte, N. C.; M. Ousley, P. O. Box 816, Greenville, S. C.; Chas. Sidney Jordan, Monticello, Ga., and L. K. Jordan, Sales Mgr., Monticello, Ga.

**U. S. RING TRAVELER CO.**, 159 Aborn St., Providence, R. I. Sou. Reps., William W. Vaughan, P. O. Box 792, Greenville, S. C.; Oliver B. Land, P. O. Box 158, Athens, Ga.; Torrence L. Maynard, P. O. Box 456, Belmont, N. C.

**VEEDER-ROOT, Inc.**, Hartford, Conn. Sou. Office, Room 231 W. Washington St., Greenville, S. C., Edwin Howard, Sou. Sales Mgr.

**VICTOR RING TRAVELER CO.**, Providence, R. I., with Sou. Office and Stock Room at 173 W. Franklin Ave., P. O. Box 842, Gastonia, N. C. Also stock room in charge of B. F. Barnes, Jr., Mgr., 1733 Inverness Ave., N. E., Atlanta, Ga.

**VISCOSE CO.**, Johnston Bldg., Charlotte, N. C., Harry L. Dalton, Mgr.

**WAK, Inc.**, 814 S. Tryon St., Charlotte, N. C. W. A. Kennedy, Pres.

**WHITIN MACHINE WORKS**, Whitinsville, Mass. Sou. Office, Whitin Bldg., Charlotte, N. C., W. H. Porcher and R. I. Dalton, Mgrs.; 1317 Healey Bldg., Atlanta, Ga. Sou. Reps., M. P. Thomas, Charlotte Office; I. D. Wingo and M. J. Bentley, Atlanta Office.

**WHITINSVILLE SPINNING RING CO.**, Whitinsville, Mass. Sou. Rep., H. Ross Brock, LaFayette, Ga.

**WINDLE & CO., J. H.**, 231 S. Main St., Providence, R. I.

**WOLF, JACQUES & CO.**, Passiac, N. J. Sou. Reps., C. R. Bruning, 305 S. Chapman St., Greensboro, N. C.; G. W. Searell, Box 102, Lenoir City, Tenn.

## House Committee Approves Labeling of Wool Fabrics

Washington, D. C.—The House Interstate Commerce Committee approved a truth-in-fabrics bill requiring that articles containing wool show their exact fiber content.

Under terms of the measure, introduced by Representative Martin (Democrat, Colorado), wool in an article would be classified as follows:

1. Wool—Fiber from the back of a sheep or lamb never previously used.
2. Reprocessed Wool—Fiber previously spun and worked into fabric and then reduced again to a fibrous state for reprocessing, having never been put into actual use.

Re-used Wool—Fiber reclaimed from articles which have been used.

The Senate already has passed a wool labeling bill. It differed from the House Committee Measure by designating the fiber as virgin or reclaimed wool.

## Former Mill Bookkeeper Now Raises Berries

Lindsay Swofford, who was for 16 years bookkeeper at the D. E. Converse Company, Glendale, S. C., is introducing to Spartanburg a new cash crop—utilizing by far the most unique method of cultivation yet placed in practice in that section.

The crop is the Boysen berry, and the unique method of cultivation is that of irrigation.

The Boysen berry originated in California about 1934. It is a blend of the Himalaya berry, the dewberry, the raspberry, the Logan berry and several varieties of blackberry. In appearance, it is not unlike a gigantic blackberry—being some 10 times larger than the field berry, and about three times the size of the best cultivated blackberry. Its taste is one of the most pleasing of all berries. It is singularly free of seeds, and its core—in marked contrast to many berries—is edible.



## TEXTILE PLANT FOR SALE

On July 14, 1939, at twelve o'clock Noon, at the Court House, Lumberton, North Carolina, the mill properties of the St. Pauls Cotton Mills Company, Incorporated, St. Pauls, North Carolina, will be sold under an order of the Federal Court for the Eastern District of North Carolina. This property includes:

Eighty-nine (89) acres of land, more or less, located in the town of St. Pauls, North Carolina, on which is located the office building, warehouses, one hundred and forty-three (143) cottages, and three (3) main mill buildings, containing approximately 31,960 spinning spindles, approximately 8,000 twister spindles and twenty-seven (27) looms, with the customary and necessary machinery and equipment. The mills are electrically operated.

This mill ceased operations May 20, 1939, and is in such condition that operations may be resumed without delay. Any interested parties may inspect this property by applying to G. T. Fisher, Agent, St. Pauls, North Carolina. Address communications to John H. Small, Receiver, Washington, North Carolina, or Thomas Dixon, Jr., Commissioner, Raleigh, North Carolina.



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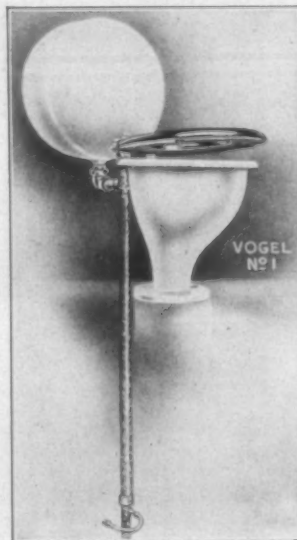
This ring, and its companions, should have been junked long before it wore through. The loss in nursing along crippled rings far exceeds the small write-off on new ones. Flash the light of inquiry on your rings—now. If they are holding production back, a change to new high-polish DIAMOND FINISH should step up output a good 10%.

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